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ABSTRACT

The cognitive development and affective development of Korean secondary school students were studied to obtain information for the development of curricula and texts, particularly for teaching the English language. Subjects responding to objective tests included 3,164 male and female students from 54 classes of 18 middle schools, and 1,981 male and female students from 36 classes of 18 high schools. Subjects responding to free response questionnaires included 201 male and female students from 54 classes of 18 middle schools, and 180 male and female students from 36 classes of 18 high schools. To study cognitive and affective development, researchers used: (1) student diaries and compositions; (2) a student concerns questionnaire; (3) two compositions and a standardized test for determining interests; (4) a standardized diagnostic test and the Thematic Apperception Test (TAT) to determine needs; (5) a values test; and (6) a semantic differential for self. Research data suggest that most students never reached the late formal operational stage of cognitive development identified by Piaget, remaining in the early formal operational stage or the late concrete operational stage. This finding has important implications for curriculum and text development, and highlights the need for learning through concrete means. Data on affective characteristics illustrate the importance of recognizing the emotional, social, and philosophical problems that students confront. Seventy-eight tables and 9 figures provide study data. (SLD)

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Regular Research Report 82-13

A Study on the Development of Cognitive and Affective Characteristics of Korean Secondary School Students

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FOREWORD

This research was undertaken as part of the Primary Study for Development of English Language Textbooks for Middle School.

For development of curriculum, textual material or teaching methodology, it is of extreme importance to understand the learner's characteristcs. By doing so, the first step toward establishing a basis for teaching and learning can be taken, which in turn can lead to more effective plans for education.

While curriculum has been revised a number of times since liberation, we cannot say that those revisions were done by progressive means, or based upon sound research. There is much to be considered in the construction of a curriculum, and what we have especially neglected to consider in our previous efforts was the characteristics of our learners based on fundamental scientific research. When we consider that our educational system was established only after liberation, the value of this research which we now undertake, will be recognized through the impact it will have on the development of our curriculum and textbooks.

This research is only a rudimentary study into students' cognitive and affective characteristics, and therefore it remains for more inclusive and comprehensive studies to be carried on.

Finally, I extend my thanks to the Ministry of Education and to the students, teachers and principals of the schools for helping in the collection of data for this study.

Kim Young-shik
President,
Korean Educational Development Institute

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I. INTRODUCTION

1. The Need for This Study

In the development of curriculum and materials for public education, the learner's social, intellectual and psychological needs must all be taken into account. In doing so, the social and cultural validity and appropriateness of the curriculum can be arrived at, and the efficiency of teaching and learning increased. To insure that these needs of the learner are accounted for, three important considerations present themselves. First, the selection of educational goals and materials which are appropriate to the level of the learner's intellectual, affective and physical development. Second, an understanding of the learner's basic needs, and of the ways in which those needs can be satisfied. And third, endowing the learner with a sense of values as an individual (Kim Ho-gwon, 1978). In the case of the development of a textbook – which plays such an important role in the Korean educational setting due to the relatively fixed nature of the materials – the need for these kinds of considerations becomes all the more apparent and important. While textbook research and development programs have progressed further than ever before, the processes and procedures of development must become more scientific before this research can reach the necessary levels of accuracy. To accomplish this, a stage for practising basic research needs to be set up. In this stage, basic research into such areas as the learner's intellectual and affective readiness, and basic inquiries into such data as social and individual requirements, along with analyses of currently available curricula and texts, must be insured (Han Jong-ha, 1982). Although the question of how to use and refer to the results of the research must eventually be dealt with, in situations where even the basic data for textbook and curriculum development are absent, our primary concern must be with the fundamental research itself, which can lead us to an understanding of the learner.

Chung, Bum-mo (1956) pointed out that the need for basic research into the needs of the learner, as a resource for curriculum and materials development, could be demonstrated in three statements:

1. Education begins with human beings.
2. Education can be achieved more efficiently by making use of the learner's needs, interests and problems.
3. Democratic education always concerns itself with the human being and his society.

Of these statements, the first one – as a simple truism – is often overlooked. We can see that as far as the learner's behavior is considered to be the object of our educational goals, education cannot be achieved without knowledge of the nature of the learner – knowledge, intelligence, attitude, interest, skill – and at what level these components are placed. It should be recognized that the planning of teaching and learning for a desirable change can be set up only when we know what more the learner needs in the way of knowledge and skill and what is distorted in his attitude.

The second statement emphasizes that more effective learning can be achieved by considering the learner's needs motivation, interests, and stage of development related to the degree of learning already accomplished.

The third statement asserts that democratic education is based upon a belief in human potentiality and allows the learner to participate in the selection of educational goals, directions and materials of any form, as well as offering materials appropriate to the learner's level of ability to enable him to experience the achievement of learning. The significance of educational research viewed in light of these points can now be easily seen.

First of all, by understanding general characteristics of development in secondary students from the perspective of development theory, the research is able to contribute to the construction of a scientific curriculum. A knowledge of how learners develop does not directly

answer the question of how to educate learners, but it does offer a basis to decide on what kind of education or training is desirable. In addition, a knowledge of development can enable a teacher to predict future achievement more accurately and therefore, in the planning of current programs, to pay more attention to future possibilities (Taba, 1962). Curriculum design does not demand a static norm of achievement and progress be imposed on the individual, but instead allows the selection of learning by helping in the formation of personalities and by offering broad educational possibilities.

On the other hand, current theories of development have not considered Korea's social and cultural peculiarities. Yet the results of foreign theories have been introduced here which do not reflect the Korean situation. What this means is that a study to grasp the characteristics of development of Korean secondary students must be undertaken. Such a study would be a steppingstone for educational research of the future.

2. The Aim of This Study

The primary objective of this study is to determine the cognitive and affective characteristics of secondary students' – adolescents' – development. With regard to cognitive characteristics, stages of cognitive development of secondary school students will be surveyed on the basis of Piaget's theories of cognitive development. As for affective characteristics, emotions, interests, needs, values and self-consciousness will be analyzed.

We will begin our study by first examining the level of secondary school students' cognitive development:

1) Examine the degree of development of the students' abilities to deal with logical thinking patterns such as proposition, probability, combination, two-dimensional reasoning and seriation.

2) Examine cognitive development of secondary school students in compliance with Piaget's stages of cognitive development.

Second, we will examine the affective characteristics of secondary school students.

Third, we will examine the interests and concerns of secondary school students.

1) Examine their daily routines.
2) Examine their self-directed activities and the content of their unsolicited communication.
3) Examine their concerns and problems.
4) Examine their dissatisfactions with their educational situation and their requests for curricular and material additions or changes
5) Examine what they want to possess, accomplish and obtain.

Fourth, examine the general tendency of secondary school students' needs and press in accordance with Murray's classification system.

Fifth, examine the general tendency of secondary school students' values.

Sixth, examine secondary school students' self-image and their identity figures.

II. REVIEW OF RELATED LITERATURE

1. Cognitive Development

A. Piaget's Cognitive Development Theory

The theories of Piaget, the Swiss developmental psychologist, are the most inclusive and penetrating in the field of the study on the formation of children's and adolescents' knowledge and the developmental stages of intelligence.

According to Piaget's cognitive development theory, children's intelligence goes through several stages before it reaches the adult level. For example, we might mention propositional thinking and hypothetio-deductive thinking as characteristics particular to adult intelligence. According to Piaget's theory, these logical modes of thinking are explained as intelligence characterstics which are not formed until the formal operational stage of development (Inhelder & Piaget, 1958). Piaget's assertion is that these intelligence characteristics are completed through several stages of qualitative change (Piaget & Inhelder, 1969).

Piaget's theory of cognitive development is divided into four stages.

The first stage, from birth to age 2, he calls the sensorimotor intelligence stage. Human beings must pass through this stage without benefit of the abilities of the adult intelligence. In other words, adult hypothetico-deductive thinking develops from the primitive starting point of this sensorimotor stage. An intellectual characteristic of this stage is that understanding and adaptation are achieved solely through sensorimotor functions; without any adult thinking they are able to adapt to their circumstances. As a result, sensorimotor functioning at this stage is exremely acute and active. During the latter half of the stage – with the development of language – the intellectual charac-

teristics take on a new dimension.

The second stage, from 2 to 6 years of age, is the pre-operational thinking stage. At this stage, with rapidly increasing active use of language, children communicate very differently than they did in the former stage and, within restrictions, they begin including primitive logic which was not found in the previous stage. At this point primitive logic is characteristically intuitive. Children of this stage are unable to explain the process of their logic yet they are able to get certain answers to their questions. Piaget therefore sometimes called this stage of thinking in 4-5 year old children, the intuitive thinking stage (Piaget & Inhelder, 1969).

Piaget labelled these intellectual characteristics as pre-operational thinking. In this instance, operation, as used by Piaget, means intellectual action. Piaget described intellectual operation as being composed of several intellectual actions. For example, it includes what is defined as a concept of reversible thinking or compensational thinking. In this case, the term "reversible thinking" means the ability to explain the details of a case with logical inevitability. For example, the same amount of juice in two cups of the same size (A and B) are shown to a child. With the child looking on, one of the two cups of juice (A) is emptied into a cup of different shape and size (C). Then the subject is asked to compare the amount of juice in the other cup (B) and the different cup (C). If the subject has the capacity of reversible thinking, he will answer that they contain the same amount of juice. That indicates that he recognizes the conservation of quantity of substance. But if the subject is incapable of reversible thinking he will reply that the cups have different quantities of juice. Piaget regarded the intellectual characteristic of a child without reversible thinking as "pre-operational."

In fact, this pre-operational intelligence might be regarded as a precursor of the adult's logical thinking, and might thus be called

"primitive" logical thinking. As the latter half of this stage is reached however, children begin to display characteristics which presage a major intellectual change.

The third stage is known as the concrete operational thinking stage. This stage, spanning ages 7-12, represents a major qualitative change in the child's cognitive development.

The intellectual characteristic of this stage is reversible thinking. As we have noted above, the experiment in recognizing the conservation of quantities of materials shows the characteristics of reversible thinking. Children at this stage are able to recognize logical inevitability as exemplified in the experiment, i.e., even though the containers are changed unless we add or reduce the materials they contain, the original quantity remains the same. This logical judgement is the same as the adult's. From this stage children begin to command the same characteristic as the adult logical thinking. The child now is able to make use of adult logical processes such as logical connection between cause and effect, the relation of two variables and recognition of all possibilities for a certain case.

But a characteristic of this stage is that, even though adult logical thinking is now available, it functions only within a limited range and under limited conditions. In order to reach the adult stage there is still, therefore, another stage to go through, since reversible thinking, or the logical relation of cause and effect, can now occur only under concrete circumstances (Piaget, 1971).

Logical judgement and thinking for children at the concrete operational stage become unreal under abstract or formal conditions which cannot be perceived by sensory functions. What this means is that hypothetico-deductive reasoning is beyond their capabilities, and also that for children at this stage, propositional thinking is also impossible.

But Piaget stated in his theory that toward the end of this stage – around the age of 12 – abstract thinking similar to the adult level

begins to develop. In other words, at this stage qualitatively changed intellectual characteristics begin to emerge. Piaget classified this as the formal operational thinking stage.

This fourth stage – formal operational thinking – prevails during the years from 12 to 16. Adolescents of this period can be said to have reached the adult stage of thinking. They possess the same intellectual characteristics of the adults they are capable of hypothetico-deductive thinking, can use formal or abstract conditions and command propositional logic (Inhelder & Piaget, 1958).

Piaget enumerated conservation of quantity and volume, the logic or concept of proportion, the logic of probability and combination, separation or control of variables, proposition formation and hypothetico-deductive reasoning as the characteristics of thinking during this stage. These kinds of thinking can be regarded as the characteristics of adult thinking.

B. Characteristics of Cognitive Development

Piaget's theory of intellectual development, which we have just discussed, can be summarized by several general characteristics. First of all, children's cognitive development takes considerable time. It takes more than 12 years to arrive at the beginning of the adult stage of logical thinking – that is, six years to move from the sensorimotor stage to the pre-operational thinking stage, and more than another six years to reach the stage of adult intellect. These twelve years coincide with the time required to finish the elementary school education. Next, the stages of cognitive development are of a continuous nature. They cannot be cut short, nor can a prior stage come after a following one. The stages also have a certain character of connection. When the intellectual characteristics of one stage reach the next, they are qualitatively changed, while fundamentally they retain characteristics of the former stage (Piaget, 1970). In other words, intellect develops gene-

tically. Piaget maintained that, in a sense, intellect develops through a process of evolution.

Finally, any stage of this cognitive development can be easily classified by means of investigating the characteristics of that stage. For example, logic of proportion or of conservation of quantity can be investigated. As a result of this characteristic, Piaget's theory of developmental stages has been repeatedly investigated throughout the world.

While opinions challenging Piaget's theories have rarely appeared, many studies have demonstrated that a particular stage of development and the age range presented by Piaget for that stage, differ in reality.

Results of these studies have shown that while 15 or 16 year old adolescents are supposed to show formal operational thinking, this is often not the case. According to Renner's study (1971), less than 20 percent of 17 or 18 year old college students show cognitive characteristics of the formal operational stage. Lawson (1973), Karplus (1970), Appel (1977) and other investigators have found similar results in their studies. When 300 Korean middle school students were investigated, it was found that less than 10 percent of the students (median age 14.7 years) had reached the stage of formal operational thinking (Han Jong-ha, 1977). The results of this investigation cannot be said to indicate a general tendency, since it was not carried out on a nation-wide scale. But when considered along with foreign studies, it is clear that there is a large gap between Piaget's developmental stages and his predicted age ranges.

Most of all, what these studies show is that the cognitive development of children and adolescents has a great deal of individual differences. For example, the fact that an individual has reached the age of 16 is no guarantee that he has reached the stage of formal operations which is the predicted intellectual stage for that age. As we have already indicated, there is a great difference between individuals in the

time it takes to attain a specific level of intellectual development.

Therefore, if we accept Piaget's theory of cognitive development in its totality and apply it to our educational postures, there is a very real possibility of creating considerable alienation. For example, if we expect, let us say a 12 year old child to be capable of formal operational thinking due to the results of Piaget's work, and based on this assumption we plan a curriculum and select materials, there is every possibility that harmful effects will arise.

2. Affective Development

A. Theory of Development

Human affective characteristics cover a broad spectrum; from the ability to pay attention to a simple phenomenon to the complex human personality, with its internal consistencies and conscience. This research deals with emotions, interests, needs, self-consciousness and the values they produce. These concepts are not easily classified. They are closely related and include many mutual elements. In this study these concepts will be operationally defined and will be used thereafter according to those defined meanings.

While needs can be said to be related to specific goals and to be temporary states whose stability fluctuates according to whether the goals are satisfied or not, interests are related to a group of goals and have a relatively stable and durable character. On the other hand, although needs as well as interests have constant motivation, needs are generated by conditions or positions, while interests are motivated by activities (Hwang Jung-gyu, 1969).

Comparing interests with attitudes, we can say that while attitude is a tendency to act in a certain way, interest includes preference but does not necessarily require an action based on that preference. In

addition, attitude generally tends toward specific groups, institutions, concepts and objects without preference, but interest always implies preference for a group of activities (Sax, 1974).

Psychologists generally perceive values as a higher dimension than motivation. In general, values are the individual's disposition to like or dislike something, but it differs in this from interest in being based solely on desirable concepts.

The notion of personality comprises all of these concepts (Chung Wonsik, 1969; Guilford, 1959). Accordingly, developmental theory of affective scope can be investigated in two ways. In one, the development of the whole personality is examined, while in the other, each characteristic of development, such as interests, needs, emotion, values, self-consciousness etc., is considered seperately. This study will first examine Erikson's developmental theory, which examines the whole personality, and then will investigate characteristic-based developmental theory.

1) Erikson's Theory of Personality Development

Erikson divided the development of personality into eight stages and enumerated characteristics of positive development and of negative development for each stage in the following manner. (1) Trust vs. mistrust in infancy (one year old), (2) Autonomy vs. shame and doubt during early childhood (2-3 years old), (3) Initiative vs. guilt in the pre-school period (4-5 years old), (4) Industry vs. inferiority in the school years (6-12 years old), (5) Identity vs. identity confusion in adolescence (13-18 years old), (6) Intimacy vs. isolation in early adulthood (19-25 years old), (7) Generativity vs. stagnation in adulthood (26-40 years old), (8) Ego integrity vs. despair in senescence (from age 41).

The first and fifth of the eight stages have gained the most attention. Suh, Bong-yun (1975), commenting on the fifth stage, said that

the sense of ego identity, then, is the accured confidence that one's ability to maintain inner sameness and conformity is matched by the sameness and continuity of one's meaning for others.

Establishment of a sense of identity begins with one's relationship with one's mother. Basic trust gained in infancy is fundamentally established by, and develops from, the continuity and homogeneity of the individual experience. It seems, therefore, that identity is originally established in infancy and is particularly dependent upon the relationship with the mother. Erikson implies this fact in his system of general theory, although concrete mention of the establishment of identity does not appear until his discussion of adolescence.

In the establishment of the adolescent's new identity, elements of past identity go through a process of reconstruction. These internal events – qualitative and quantitative alteration of internal conflicts, enlargement of mental equipment, and new but often conflicting social demands – show that previous self-adjustment has been incomplete, and casts doubt on earlier opportunities and compensations so that the past identity is confronted with new conflicts. In short, the adolescent experiences an identity crisis when faced with not only mental and sexual changes from within, but also psychological and social demands, generally threatening, from the outside. But these normal developmental crises are responded to with newly created energy, and in this respect, differ from external or neurotic crises. This kind of identity crisis can also be considered as a kind of process and so, from the point of its genesis, the establishment of identity appears to be an evolutionary process of structure. The structure itself seems to gradually establish itself by means of ego synthesis and reunification which are achieved during childhood. Structure here means the structure composed of constitutional givens, individually specific and instinctive needs and critical identities and capacities.

The main cause of adolescent identity crisis during normal de-

velopment arises from difficulty in the process of reunification of identity. In addition there are other contributing causes. Of these, the most important is maturational change. Sexual maturation at this period incurs qualitative reformation of individual basic drives and upsets the balance between Id, Ego and Super-Ego. As a result, new psychological reactions emanating from the Id have to be controlled and integrated. At this stage, psycho sexual drive which was not put into operation in previous stages or was not sublimated previously, temporarily captures the adolescent's attention and new conflicts erupt. In addition, choices to prepare one for adulthood, such as the choice of job or spouse, is forced upon the individual. Thus this period is one of self searching, in which the adolescent pursues sexual and occupational identities, and a period also of self-standardization. If the individual has absolutely no expectation of the position he will occupy in society in the future, or no insights into future possibilities, he will experience identity-confusion. As a result he may establish a negative identity in order to escape from non-identity, and this in turn can lead to juvenile delinquency or criminal behavior.

2) Emotion

Feeling is the state of pleasure or displeasure related to external stimuli or internal images. Emotion is generally considered a specialized state of feeling. Emotion is a comparatively intense physiological response, like rapid increase of the heartbeat, tensing of muscles, etc.. Moreover, emotion includes all activities which differentiate degrees of intense feelings (Dictionary of Education, 1980).

Emotion consists of three elements; physiological change with physical perception, subjective cognition along with significant construction of this perception, and possible external actions resulting from this cognition. Various theories of emotion differ in their ranking of these elements but every theory includes them (Arnold, 1970).

Emotion channels accomodation responses to increase the indivudual's possibility for existence, reinforces social relations between the individual and the group, and reflects the individual's inner world.

According to Bridges' (1932) study on emotional differentiation infants show only distracted agitation, but with growth various emotions become differentiated. At the age of two their emotions differentiate love, delight, anger, fear, hatred, and jealousy. Control of the emotions is at the core of emotional development but this development is concomitant with alterations of situations and objects causing emotion.

When we observe the factors of emotional development we find that maturity develops only the possibility of emotional expression, but that the matter of making certain emotional expressions in reaction to particular objects is entirely a result of learning. In other words, most emotional expression is learned through mental processes such as conditioned response, imitation, and identification with others.

3) Interest

Interest is defined as the tendency to prefer or to be attracted by, a certain form of action (Thorndike and Hagen, 1969). This definition emphasizes two points. First, interest involves the selection of certain actions and the decision to rank things along a scale of liking or disliking. For example a student might prefer listening to records to solving mathematical problems. Second, interest is related to the attraction of particular acts or actions. Interest is usually represented by verbs which express action such as to read a book, to plant a flower, to take a picture etc.

The form of one's intrest changes with growth. In childhood, interest is concrete, undifferentiated, passive, fragmented and inconsistent, but with growth it gradually turns from the concrete to the abstract, from fragmented to systematic and synthetic and from the

inconsistent to the consistent (Hwang Jung-gyu 1969). In adolescence, newly developing changes are often the result of physical and social changes of this period, but the interest of an adolescent is influenced by many factors; sex, intelligence, the environment of daily life, opportunities to develop new interests, recognition of the social value of particular interests, the interests of friends, intrests of society and family interests, etc. (Hurlock, 1968).

4) Need

Murray defines that a need is a construct (a convenient fiction or a hypothetical concept) which stands for a force .... in the brain region, a force which organizes perception, apperception, intellection, conation or action in such a way as to transform in a certain direction an existing, unsatisfying situation. According to Murray, a need is generated internally or arises from external acts. In the case of external impetus in any event, the need causes the organism to act and the action continues until it is altered due to satisfaction of the organism's need.

Murray (1968) postulated certain bases which presume the existence of need. (1) Result of an action. (2) Specified form or style of an action. (3) Selective notice or response to a specified stimulus. (4) Expression of a specified emotion or feeling. (5) Expression of satisfaction or disappointment as a result of achievement or non achievement.

Jang, Sang Ho (1969) considered various levels of need arranged on a hierarchical scale – primary needs, social needs and the need for self-realization. Primary needs include such things as the need to satisfy hunger, thirst, sex and pain with physiological and neurological conditions, and more or less common needs of organisms like action, curiosity, search, and handling of impulse. Social need can be called a secondary need, attained need or psychological need. Motives classified by Murray belong in this category. Social need is closely related to

the application and preservation of self within the social intricacies. The need for self-realization presumes that humans have a tendency to realize their own unique individuality and that their lives are enhanced when this tendency is actualized, Maslow (1970) placed social need into the highest category in his own hierachy and put much stress on its importance.

5) Self-concept

Self-concept is the whole of organized feeling about oneself and is experienced during the process of interaction with society. Studies on self-concept are in the same context as those on personality development (Lamb, 1978).

From the point of general development, self-concept is shaped and developed beginning in early infancy. As each organ of the body engages in its own function, the concept of self is gradually enlarged (Gesell, 1956). Freud's and Erikson's (1968) psychoanalytic analyses concerning the development of self-consciousness take a serious view of it as a more dramatic experience – emotional satisfaction or overcoming of crisis – in the process of human development.

According to Gesell (1956), humans experience self-consciousness from the age of five. At the time the idea of self is an individual concept only experienced by himself or herself and has no stable existence. In spite of this, basic growth relies on self-identity even at the age of five. Erikson (1968) presented a theory of development which accounted for the concept of an enlarged ego by saying that every growing thing has a basic plan and that from this each part emerges. Each part he says, has its own specially predominant period, but eventually the parts are all subsumed into the whole where each has its own functon. Development of identity is achieved by the effects of society, which interacts with the organism whose level of existence from birth to death matures physically and mentally. The development of self

takes place as crises, which arise at each level of development, are overcome.

On the other hand, cognitive interaction theory, which emphasizes the autonomy of the individual in human development, asserts that an intrinsic cognitive element interacts with the social environment by being endowed with characteristics proper to the level of maturity. When viewed from this perspective, identity development can be seen as the process of change from egocentric thinking and action to an understanding of other people's situations and finally to an understanding of one's own self as an independent entity.

From the point of view which emphasizes the role of society in the development of identity, the entire concept of identity lies within the society and thus development can only be achieved through relationships with various social entitites (Mead, 1934; Kim Kyung-dong, 1981). According to these views, the concept of identity is gained mostly through interaction with certain important figures who are present in daily life. In the early stages of development parents are important figures, but as opportunities to interact with the social environment increase, parents are replaced by others considered important. During this stage, general thinking is enlightened and the discovery is made of how others expect one to act. When our peer group becomes important to us we have a tendency to internalize others' responses. This internalized consciousness becomes classified in concrete circumstances, and this classified self then becomes identity (Atwater, 1982).

6) Values

Kluckhohn (1951) defined value as a concept of judgement which enables one to evaluate the desirability of certain factors which influence one's selection of goals or courses of action. Park, Yong-hun (1969) summarized the characteristics of value in this way: First,

value acts on motivation internally by means of the products of one's culture or individual learning. Second, value is not a visible and concrete concept but a very abstract one even though it acts internally on individual psychological systems such as motivation. Third, it is the norm, intention and belief of the individual to allow his values to restrict his individual actions. Fourth, this kind of intention and belief systematize individual psychological organization to achieve unity of action and therefore is actually necessary for security of the individual.

Formation of values is deeply related to social development. This means that values have social meaning as well. Katz gave the following summary of the formation of a value system. First, the formation of values is regarded as developing through adaptation. Through our efforts to maximize compensation and minimize punishment from external circumstances, we make ourselves fit for society and at the same time learn about society. All of these activities may be fixed internally as values in the mind of the individual. Second, it develops through the process of ego defense. It develops by internalizing ego-defense mechanisms to protect the ego and get rid of unacceptable implulses. Third, it develops by means of the function of value expression. The demand for the expression of value organizes the individual who then responds positively to them and develops values proper to them. Fourth, values develop through cognitive functions. If we develop knowledge to serve as a standard for understanding the world, we will develop values to support that standard (Newcomb et al, 1965).

In this way, if we consider the development of values from the point-of-view of external surroundings, as well as the result of internal processes within the individual, it can be seen to parallel all aspects of human psychological development.

B. Characteristics of Affective Development

1) Emotion

According to Hurlock's classification of the stages of development, middle-school students belong to puberty, high school students belong to the beginning of youth, and the end of youth – from the age of 17.8 to 21 – coincides with college times. The three periods collectively he calls adolescence. In this chapter, following this classification, general emotional characteristics of adolescence centering on puberty and the beginning of youth are applicable to middle and high school students.

Most investigators of adolescent emotion agree that adolescence is a period of "storm and stress" or, culminated emotion. Rapid physical change by the endocrine glands results in culminated emotional tension. In early youth, years of physical growth still remain, but this growth will be merely the completion of formation which was already set up in puberty. We must, therefore, look at other considerations to explain the emotional tension of the period. In other words, while much of this tension is the result of endocrine gland alterations, more important causes are to be found among social factors. Hurlock gives the following list of social factors leading to emotional tensions:

(a) restriction imposed by parental supervision
(b) impediments obstructing options
(c) events which hinder feelings of adequacy and satisfaction
(d) societal expectations of more mature behavior
(e) adaptation to new circumstances
(f) social adjustment to members of the opposite sex
(g) failure in school learning
(h) conflict with family or friends
(i) job difficulties
(j) religious doubts

With its characteristic culmination and intensity of emotion resulting from physical and physiological change as well as all kinds of social factors, adolescence is a period lacking in emotional maintainance and safety. We can often observe remarkable emotional shifts in the adolescent; from delight and confidence and hope to ultimate despair and dejection, in the course of a single day. This emotional flux has something to do with the growth of identity. Successful accomplishment of tasks is attended by healthy delight, but failure brings forth depression and despair. In fact, childhood also has undulations of emotion, but in childhood there are no radical shifts from one extreme of emotion to the other as there is in adolescence, and the child's emotions are dependent on phyiological conditions rather than influences from the environment or from self-evaluation.

As we have seen, adolescent emotion is usually intense, unrestricted in expression, and unreasonable; but emotional behavior does improve. For example, the adolescent at 14 is often hot-tempered, easily excited and emotionally explosive rather than controlled. In comparison, at the age of 16 he is cheerful and positive, adapts well and tends not to worry (Gesell, 1956). Viewed in this light, we might say that there is no evidence that the traditional "storm and stress" is experienced at this end of adolescence.

Adolescent emotion takes the form of "mood," which we do not find in childhood. Mood is a more or less continuous emotion consciously experienced as a state of active feeling. Adolescents often experience moods in which they become absorbed and intoxicated due to certain inclinations of the mind. The reason for this susceptibility to moods is that the adolescent is strongly affected by what is perceived as cruel and severe mundaneness in the real world and so he chases after hope as reveryan ephemeral expedient – to escape from reality (Chung In-suk, 1979). To some extent these moods help to substantiate individual growth, but when moodiness becomes exces-

sive there is a danger of losing personality integrity and dulling social and moral identity.

2) Interests

Adolescence is characterized by instability in regard to interests as well as to behavior, emotion and tendency of thought. But as adolescence passes, instability of interests disappears and reaches a reasonably stable form. When we consider that adolescence is a period of preparation for, and adaptation to, adult life and that interests are deeply related to future satisfaction and present academic achievement, we recognize that there is a need to develop sound and useful interests and to amend and change interests which might hinder success in adult life. The help and guidance of parents, teachers and counselors is also needed in this period of adolescence.

Adolescent interests vary tremendously and can be classified a number of ways. Hurlock (1968) classified the most important adolescent interests into seven categories which he discusses in 'Developmental Psychology.' The kinds of interests categorized are social, recreational, personal, vocational, religious, sexual and academic.

(A) Social Interests

Adolescents are interested not only in activities with close friends but also in any form of group activity, all of which can be termed as social interests. Conversation can be mentioned first as a form of social interest. The desire to converse with others is strong in adolescence. The adolescent finds security by talking to friends to help solve his problems. These problems and interests are discussed within the group. Even after they meet at school, they continue to telephone and write to each other.

Adolescents also show active concern for other people's situations and want to help in solving difficulties. They begin taking an interest

in government, politics and the world and these interests at times lead to judgements about, and attempts to reform, these institutions. But too often, adolescent judgements are destructive rather than constructive and their plans for reform are often unrealistic.

(B) Recreational Interests

Both male and female adolescent students have less time for recreational activities than they did earlier due to the pressures of homework, extracurricular activities at school, work during the weekend and other factors. As a result there is a tendency for them to select one or two of their favorite activities and devote themselves to it exclusively; the choice–unlike during the childhood period–directed towards static considerations. Representative of adolescent interests are reading, watching television, listening to the radio, watching movies, games and sports, collecting, listening to music, and raising pets. Adolescents read not only for intellectual stimulation or relaxation, but also for self-discovery and self-creation, which was not so during childhood. Adolescents like watching television and listening to the radio, but as they grow older they tend to watch less TV and spend more time listening to the radio. This seems to result from an increase in study hours and dissatisfaction with the contents of television program. In the area of sports, boys tend to participate actively in sports such as soccer, volley ball and baseball, while girls tend to satisfy interests in sports as spectators rather than participants. Much of the adolescent's experience and perspectives on life, such as love, adventure and humor, are vicariously learned through films.

(C) Personal Interests.

Adolescents' interests in themselves is the strongest of all their interests. They believe that their external appearance rightly influences social recognition and that they are judged by their independence, money, possessions, etc. They therefore make much of personal

interests. They increase concern on their outward appearance with physical maturation and sexual development. This includes body size, hair, features, fingernails and skin as well as attire. As adolescents approach puberty, they increase interest in revealing their thoughts, feelings and judgements by keeping diaries and writing letters, poems and fiction. Bühler (1930) considered these literary activities of puberty to be an indication of development, and not of talent. One of the most common phenomena of adolescence is day-dreaming. According to Hollingworth (1928), adolescents' day-dream is mainly of love, accomplishment and stability and see themselves in their day-dreams in roles they deem as desirable. A strong desire for independence develops at this stage, often resulting in dissension with parents. As the desire to possess clothing, sporting goods, recordings and other material goods increases, it is accompanied by an increased interest in money.

(D) Vocational Interests

When adolescents near the end of high school they begin to seriously consider their future and career vocation. In general male students take the matter of vocational choice very seriously since they view it as a life-long career choice, while most female students regard a job as a temporary situation prior to marriage.

Unrealistic ideas of vocation from childhood are transformed by a genuine recognition and judgement of individual ability and an acknowledgement of the kinds of ability, education and training which are proper to particular jobs. As a result, adolescents vacillate constantly in their choice of vocation and their direction in life, but this instability gradually disappears as they grow older.

In the choice of jobs, males prefer jobs with social prestige, glamor and excitement, while females tend to prefer jobs offering security

and which make little demand on their time. Females also are attracted to jobs which allow contributions to others' welfare such as nursing and teaching.

(E) Academic Interests

Adolescent students are typically critical of school regulations, homework, and school administration in general. They also show disapproval of teachers and teaching methods. Despite their seemingly negative attitude toward school, most adolescents deal well with their school. The main reason they like school is because they view it as a basis for accomplishment – a means for rising in social status. This is clearly evidenced in students' attitudes toward going to college, where non-intellectual factors are much more prevalent than intellectual ones.

Attitudes of adolescent students toward various academic subjects are decided by their capability in the subject matter, the teacher of the subject, and recognition of the fact that the subject is proper to their sexual identity; above all, the most important factor is actual value. If students develop a hostile attitude toward a number of subjects their learning will eventually stagnate and they will accomplish less than their tested abilities predict. This hostility may result from situations in the school such as low grades, reading difficulties or rejection of their teachers, or it may also arise from undesirable family situations, especially the oppression of parents demanding higher grades.

(F) Religious Interests

Adolescence is usually a period of religious awakening. That is they begin to look critically at the religious faith of their childhood and demand a relevance from it that harmonizes with their newly matured desires. Religious doubts focus initially on the formalism of religion and proceed to examine the essence of religious principles. As they grow older they experience doubt and conflict over their prior religious

faith through religious discussion with friends, encouragement from individual considerations, and from the effect of scientific studies. But it can be said that this doubt and conflict are part of a necessary process for more mature religious faith.

Even adolescents whose environments were not religious in childhood, become concerned with religion during this period due to the instability of adolescence. They seek peace of mind and support from religion to help them escape from the uncertainty of the future and the conflict between ideals and reality which result from incomplete growth of the self-consciousness.

(G) Sexual Interests

For the important developmental task which demands a more mature relationship with the opposite sex and performance in one's sexual role, adolescents require a more complete and mature view of sex than obtained in childhood. This is necessitated by social pressure as well as by their interest in sex.

In the development of pubescent sexual ability, the child's interest in the other sex's differences gradually gives way to the adolescent's desire for sexual knowledge stemming from his intense curiosity about sex. By the middle of adolescence this intense curiosity for sexual information is mostly satisfied, and an interest in direct association with the opposite sex develops. They begin to search for an object for their affections, initially in an elder of the same sex with talent and ability, next on a member of the opposite sex with a reasonable difference in age. But towards the end of adolescence their interest shifts to a person from the opposite sex and of the same age group.

3) Needs

During adolescent development, primary needs (physiological needs) and secondary needs (social needs) are intense and tend to be

sentimental and to appear convergently. With physical and psychological change, adolescents are subject to physiological needs for sexual and other activity and social needs such as affection, superiority, and independence. All of these needs produce remarkable stress and as a result, adolescents easily become frustrated (Chang Pyung-rim, 1980). The cause of adolescent frustrations and psychological conflict can be found not only in the characteristic : anxiety and perturbations of this transition period, but result also from such factors as the many social limitations arising from discrepancies with the growth of self-consciousness, conflict with individual moral standards, and discouragement resulting from overly ambitious goals. This frustration and conflict can cause emotional upheaval, mental disorders, social deviation and learning stagnation, therefore elimination of the causes or rectification of unsuitable behavior is called for. With so much indivudal variation, adolescents need the guidance of parents, teachers and society to help them promote their health, choose sound interpersonal relationships, establish desirable self-concept, establish diversions from unhealthy desires, find a proper balance between study and recreation, talk about their troubles, develop critical judgement of others and a concern for art and literature, and develop a satisfactory vision of life.

4) Self-concept

Adolescence is a period in which the individual experiences a sudden change in self-consciousness as the prior tendency for rather slow change suddenly shifts. The individual internal changes the adolescent goes through include physical, psychological, sexual and cognitive transitions, while socially they are oppressed by the demands society places on them as a youth. To achieve true adulthood, not just physical maturity, they must gradually gain independence from parents, accept their sexual change, build cooperative and harmonious relationships with the opposite sex as well as the same sex, and establish a world view

and identity that prepares them for future careers (Conger, 1978). Prior to entering into society – which is composed of a homogeneous population as a result of the civilizing process – we are acutely aware of the gap between our recognition of society and that of our own self, and at that time see the "real self." At that moment we discover a "new" self, and change and reorganize our identity accordingly (Felker, 1974). To discover a new self in adolescence is to look inside oneself and to discover a new ideal world in which one considers self as a thing independent from all other things. The egocentrism of adolescence asserts that it can reorganize the world to fit their subjective view, which is not the case in childhood where social recognition is absent. egocentrism is the powerful desire to achieve stability for the self (Windmiller, 1975). Strong egocentricity is sometimes represented as resistance and may become an expression of self-assertion which is excessively attached to the immature self (Office of the Prime Minister, 1981). But this kind of egocentric resistance is socially tolerated within certain limits. Society allows the adolescent a moratorium on this behavior to encourage him to test his role and find a solid identity (Donald, 1973). External pressures calling for self-establishment along with individual internal inconsistency, create the identy crisis and demands to overcome the crises lead to a turning point for the adolescent's understanding of himself and his relation to other individuals.

5) Values

Middle and high school students belong to a transitional stage, passing through puberty from age 12 to 15 and middle youth from age 15 to 18 (Pikunas, 1976). Puberty is a period which brings development of the generative functions to a close, and is a very important

period both mentally and physilogically. During this stage intense inner conflict and agitation is experienced (Hall, 1904; Haviland et al, 1981). As a result the individual suffers from emotional upheaval and internal tension. Despite the whirl of physical and emotional instability, the necessity to find the self causes him to acquire a persona against external circumstances and to stabilize his attitudes. Values begin to be settled on in adolescence and thereafter gradually influence all phases of individual growth. In childhood, values are most probably formed as a result of changing situations, but little by little the adolescent acquires his own values through acquisition and internalization (Muuss, 1975). In time, value judgements become internalized in the adolescent, despite his emotional instability. But as a result of that instability the degree of internalization is not very high, and the instability is so severe that a serious gap between thought and action results. The following remarks present a summary of the general characteristics of adolescent values.

First of all, attitudes and values of the adolescent are transitional. Adolescence reaches from childhood to adulthood in the process of human development, and the adolescent's attitudes and values can be understood only as a part of this process. Adolescence is an experimental period in which to test attitudes and beliefs. From the cognitive point of view adolescence is the process of the development of formal abstract thinking ability beyond concrete thinking and during this process of change internalization remains unstable as well (Windmiller, 1976).

Secondly, the attitudes and values of the adolescent are extremely antagonistic towards adult values. Their demands for a rejection of fixed standards of value and their search for alternatives are expressed through an independent world view which parallels their growing self-consciousness. This leads them at times to challenge adult authority and to create their own value systems (Muuss, 1968).

Thirdly, adolescents have a tendency to make much of the values and attitudes of their peer groups. If they reject adult values and create their own systems, they tend to retain their peer group's values as they reject all others except their own. This occurs because of the discovery within the peer group of mental support and social recompensation after suffering isolation from a wide range of society, and from a sense of mutual dependence.

Fourthly, a standard upon which to base values is unavailable and so attitudes tend to be inconsistent and appear to be complicitly arrived at. The application of a standard of values differs with every situation due to the incomplete nature of the adolescent's self-consciousness. According to Rogers (1977), it is difficult to find attitude of consistent values among American adolescents. Without application of a generalized value system, adolesecents proffer attitudes which will be accepted as good in conventional society as a way of escaping criticism and reproach. This indicates that while vacillation is less severe than in childhood, the adolescent is not mature enough socially or intellectually to make mature choices.

Fifthly, there is an intense tendency to pursue idealized values. Adolescents tend strongly towards an ideal world rather than the real one. According to Freud, this tendency serves as an outlet for the adolescent. They attmept to display a certain fastidiousness by rejecting anything which does not meet their own standards (Hurlock, 1968). According to Piaget this characteristic stems from adolescent egocentrism and is a part of the process to institute standards upon which to base decisions (Windmiller, 1976).

III. THE METHOD OF RESEARCH

1. Research Design

This research into the characteristics of cognitive and affective development of Korean middle and high school students, postulates region, grade, age, sex and socio-economic status of family as independent variables and particular characteristics of cognitive and affective development as dependent variables

A. Independent Variables

1) Region

This is defined as the location of the school being attended, and three regions are identified. Large cities includes Seoul, Pusan, Taegu, Kwangju and Inchon. Middle and small cities includes administrative units designated as a city for more than one year. Rural areas includes all administrative units designated as 'eup' or 'myun'.

2) Grade

Five grades are designated, from the first year of middle school through the second year of high school. The third year of high school has been excluded due to difficulty in obtaining data.

3) Age

This variable is considered only in connection with cognitive development (Test for Development of Logic), and is composed of five ages from age twelve through age sixteen and is applicable to grades from the first year of middle school through the second year of high school.

4) Sex

This is classified as male and female.

5) Socio-economic Status (SES)

This is reported as one of four levels which are derived by synthesizing the responses to four questions which measure it. The four questions record the student's perception of the family economic situation, father's occupation, father's educational background and family total monthly income. The process of computing SES is divided into two steps. In the first step, a distribution of student responses to each question is produced and 1, 2, or 3 points are recorded according to the distribution of each response, on the basis of 25%(low) 50% (middle), 25%(high) (Table III-1. Table III-2, Table III-3, Table III-4). In the second step, the scores of the four questions from step one are added together and once more a distribution is produced. On the basis of this distribution, four levels of SES – low 20%, middle-low 30%, middle-high 30%, high 20% – are recorded (Table III-5).

B. Dependent Variables

The dependent variables in this research are as follows:

1) Cognitive Development

Development characteristics of cognitive domain will be investigated as to the degree of development of logic, which is regarded as a basic factor in Piaget's theory of cognitive development, and will also be analyzed by the level of cognitive development. The branches of logic are proposition, probability, combination, two-dimensional reasoning and seriation, as proposed by Gray (1976). The characteristics of each type of logic are as follows: (1) Proposition – the ability for unlimited

abstract reasoning based on concrete observation; occasionally refers to propositional-deductive thinking with no concrete basis. (2) Probability – the ability to recognize the degree of certainty of the occurrence of an event. (3) Combination – the ability to identify and control variables or factors in a combinational system (4) Two-dimensional reasoning – the ability to identify and relate variables and factors in terms of compensation or interrelationship. (5) Seriation – the ability to locate and identify objects or events in a sequential order according to a certain factor or characteristics. This study makes use of the development of these five types of logic to analyze general cognitive development into two stages – a stage of concrete operation and a stage of formal operation – which are applicable to middle and high school students – and divides each stage into two phase; the early part of phase and the late part of phase (classification of early and late phase is referred to in the section "Analysis of Data", Chapter III-5).

2) Affective Development

(A) Emotion

The research on emotion in middle and high school students is done through analysis of diaries which record the student's feelings concerning episodes of daily life, interests and attitudes.

To understand the major emotions of middle and high school students, the diaries are analyzed from two aspects – emotional aspect and content (thematic) aspect. Emotion is classified into 17 types based on a synthesis of various scholars' classifications. The 17 types of emotion are as follows:

(1) Fear – emotion experienced by an individual in danger.

(2) Worry – a kind of fear resulting from an imaginary cause.

(3) Depression – a feeling resulting from failure to achieve an important goal or solve a problem.

(4) Mood – a gloomy feeling with no external stimulus.

(5) Anger – emotion arising when a desire is hindered

(6) Sadness – complex feeling related to various emotions such as loss of affection, despair, fear, solitude, and guilt.

(7) Shame – a feeling of inferiority about oneself in relation to others.

(8) Guilt – emotion which arises when an individual acts without conscience or violates internal standards of good and evil.

(9) Jealousy – a stage of united emotions such as anger, fear, love, self-respect, and competition.

(10) Envy – an emotion which cannot be differentiated physiologically from jealousy.

(11) Joy – emotion arising from fulfilled desire.

(12) Affection (for relatives, friends, members of the opposite sex) – a feeling which attempts to make an experience of joy concerning an object remain.

(13) Curiosity – an emotion accompanying the desire to explore the new, the precious and the unknown.

(14) Yearning – a desire to see an object of love which is far removed.

(15) Wish – an aspiration for the realization of a desired object.

(16) Pride – an emotion of positive self-evaluation as a result of achievement.

(17) Will – a pledge regarding achievement of a future task.

(B) Interests

Interest, which is one of the affective characteristics and takes an important part in determining human behavior, can be examined from three sides (expressed interest, activated interest, tested interest) (Supper and Crites, 1962). Of the three, this study emphasizes the measurement of expressed interest, and uses a ranking method and a free response questionnaire to obtain measurements. To determine the main interests occuring during the development process of middle

and high school students, the study examines (1) expressed interests in everyday life, especialy daily routines of weekdays and holidays (2) students' common concerns, problems, and complaints regarding school; preferences in curricular matters and school activities and problems of students in general, (3) the kinds of things students want to possess, and the goals they wish to obtain or accomplish and (4) concern and interest in regard to activities and conversations as shown during the developmental process.

(C) Needs

Measurement of needs, which is an internal variable affecting behavior and motivation, was accomplished with a projective technique and a standardized test. For the projective technique this research classified 35 kinds of needs according to Murray's TAT (Thematic Apperception Test)[1] and for the standardized test, made use of Hwang Jung-gyu's diagnostic test of needs (1965) to measure and analyze nine of the psychogenic needs from Murray's needs theory, such as the need for abasement, achievement, affiliation, aggression, dominance, emotionality, exhibitionism and sex.

(D) Self-concept

This examines how the students think and feel about the character and behavior of themselves and mdividuals respected by themselves. Measurement was achieved using Osgood's semantic differential scales (Osgood et al., 1957). The semantic differential scales for self is composed of 20 adjectives and rates on a 5 point scale. The research also concretely determines who the identity figures are.

(E) Values

This research makes use of a seven dimensional classification of value expressed as view, based on Kluckhohn and Strodtbeck's model

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1) For the classification of needs, refer to Table III-17.

(1961), and measures values through responses to each type of orientation. The model used in this research is reproduced in Table III-6.

The contents for each type, of value are as follows:

(1) Human Nature Orientation

- o Original Sin – the belief that human nature is fundamentally evil and normal acts are therefore passive.
- o Neutral – the belief that human nature is neither good nor evil, so that the value of an act varies with its conditions.
- o Innate Goodness – the belief that human nature is good and every individual does his best to improve the society.

(2) Man-Nature Orientation

- o Subjugation to nature – the idea that the will and wisdom of an individual cannot overcome the power and phenomena of nature and society, so the individual has no choice but to accept it.
- o Harmony with nature – the idea that an individual and his external world are not seperate, but a united whole.
- o Mastery over nature – the idea that the will and wisdom of an individual can overcome and change the power and phenomena of nature and society.

(3) Time Orientation

- o Past – the idea that standards for behavior are to be found in the past, and that the present and future do not differ fundamentally from the past.
- o Present – the idea that standards for behavior are to be found in the present, but not in the past or future.
- o Future – the idea that we can overcome our present difficulties through anticipation, and faith that the future will be better than the past and the present.

(4) Activity Orientation

- o Being – as an evaluative standard for human actions or

objects, it emphasizes human inner needs, the satisfaction of impulse and spontaneous individual expression, and makes little of self-improvement of exploitation.

- o Becoming – the idea that an individual restricts his own needs, it emphasizes harmonious self-improvement of the individual as a whole
- o Doing – it emphasizes the effects of achievement which can be measured by external objective standards.

(5) Human Relational Orientation:

- o Linearity – puts emphasis on hierarchy within the group, and grants superiority by age, generation, ability, position and authority and also emphasizes the responsibility of the superior.
- o Collaterality – the idea that each individual is an integral part of a social organization and that the equal rights of every member of the group must be protected.
- o Individualism – the idea that the aims and role of the individual are to be considered more important than those of the group, and that standards of behavior are selected by individual conscience.

(6) View of Economy

- o Aim – the idea that acts for financial gain, limitations on the need for money, and the placement of value on money are justified aims in and of themselves and that economic acts are more important than any other.
- o Moderate – the idea that economic acts are neither aim nor means.
- o Means – the idea that economic acts are justified as the means of maintaining existence

(7) View of Money

- o Saving – the idea that money on hand or expected should

be saved.

- o Buying Goods – the idea that money should be used for the purchase of necessary goods, it is considered as a tendency to value personal surroundings.
- o Spending on Entertainment – the idea that money should be used for entertainment.

2. Subjects of Research

A. Method of Selection and Number of Subjects

The subjects used for this research are male and female students of Korean middle and high schools and were selected by stratified cluster sampling using stratified regions. The regions are divided into large cities, middle and small cities and rural areas. The schools selected are those which have more than three classes[2] for every grade. Types of tests,[3] regions, grades, selected schools, classes and numbers of students are given below (Table III-7, III-8, III–9, III-10).

3. Instruments

A. Instrument Types

In all, nine types of instrument were employed in the research, two of them standardized tests and the other seven designed by the research

2) Class here refers to equal size, arbitrarily selected groups, 'ban'(반) composed of members of the same grade. Each class remains as a unit for instructional purposes for a school year. The number of groups in any grade depends on the enrollment and varies from school to school.

3) Instruments used in this research are classified according to type into objective tests and free-response questionnaires. A limited number of subjects for the free-response questionnaires were employed due to limitations of time and money involved in handling the large mass of data.

group. Instruments employed during the scope of this study are discussed below.

B. Development and Content of Instruments

1) Development of Instruments

The steps employed in the development of the instruments were setting up a development plan, checking the plan, designing first drafts of the instruments, checking the drafts, and amending and supplementation of the instruments. During the planning and checking stages, decisions regarding the type and contents of instruments were made. Instrument drafts were made by the researchers and then each draft was finalized by checking and amending carried out by professionals from within the institute and outside (two people from outside and two from within the institute for each instrument).

2) Contents of Instruments

A. Cognitive Domain

1) Test of logic development

We employed Gray's "How's Your Logic?" (Form B) (Gray, 1976) which is based on Piaget's theory of cognitive development. The test consists of 13 questions, all of which call for a direct subjective response. The test is considered accurate enough to predict a level of cognitive development (Han Jong-ha, 1977).

B. Affective Domain

1) Questionnaire of student concerns

This asks the student to select which courses are interesting and worth studying, on which course the most time is spent, and which is perceived as being most useful for the future as well as asking the student to make choices in the areas of dissatisfactions and concerns, recreation, jobs and topics to be learned in English.

2) Diary and compositions

In Bühler's and Stern's studies we can find examples of research on adolescent emotions by diary (Hurlock, 1949). These studies were designed to elicit individual responses recorded in the diary. There are two ways in which this can be done. One way is to investigate diaries which have been written naturally, that is without knowing that the diary will be investigated. The other method analyses diaries which have been controlled and developed in such a way as to elicit more material, despite the lack of naturalness.

The research elicited by diary for such factors as spontaneous feeling, emotion and attitude is much more deeply analytical than that obtained by questionnaire (Hurlock, 1949).

This study was done by collecting the diaries of students who made continuous entries in them, analyzing them at the school and then returning them to the students. But in those schools where diary collection was not feasible, we arranged for the students to write a composition with the instructions, "Write a diary about your activities yesterday" in an attempt to obtain data on emotional characteristics similar to the diaries. It was recognized that the compositions might be affected by analysis of both the spontaneous diary type and the controlled diary type, and therefore the researchers made a diagram of diary analysis and a stardard dual division diagram of diary contents.

3) Compositions 1 and 2

We chose to use compositions to investigate deep concerns of the students. The students were assigned a composition topic and then allowed to compose freely on a single sheet of octavo-sized paper. The topics of the compositions were as follows:

Composition 1. If you had a ten-day vacation beginning tomorrow, without any school restraints and unlimited expenses, what would you do? Why?

Composition 2. If you went on a trip with your friend or talked to your friend all night long, what would you talk about? Or what, in fact, do you usually talk about?

4) Thematic Apperception Test

We made use of a projective technique to discover just what the students' desires were. The technique for inquiry of personality and needs is based on Murray and Morgan's TAT (Thematic Apperception Test) (1935). TAT is mostly used for individual personality studies or clinical studies of insanity, but since a method for group application was discovered it has been used extensively for investigation of need. Furthermore, by reducing the number of illustrations, specific needs for sex, achievement, and affiliation can be measured by certain illustrations, and by amendment of descriptions of characters and situations, the TAT can be tailored to a specific cultural group or children. Moreover, when necessary for purposes of test application, only certain illustrations, proper for achievement of an expected result, can be selected for inclusion (Chung Bum-mo & Park Yong-hun, 1969).

For our research we selected two of the traditional TAT illustrations from the Harvard University print illustrations, and we chose two of Chung Bum-mo & Park Yong-hun's (1969) illustrations for measurement of motivation for achievement. The Harvard illustrations were amended by altering the characters and situations to make them suitable for use in Korea. If any of the four illustrations needed to

represent males or females, we re-drew them. The number of illustrations each student responded to was four. After two professionals checked the illustrations and the diagram of analysis they were decided upon.

5) Standardized needs diagnostic test

This is a type of standardized personality test which Hwang, Jung-gyu developed on the basis of Edward's Personal Preference Inventory in 1965. Originally an extensive personality test, it is used here to diagnose needs, which is a basic concept in personality formation. The theoretical background can be found in Murray's needs theory and motivation theory, which applies Freud's psychoanalytic projective technique. Murray mentions that the primary variable of personality is the character of motivation and that human needs are the source of that motivation. In this study needs are divided into primary needs which are physiological needs, and secondary needs which are needs originating from the mind.

The nine types of needs classified as variables in this research are:

a. Need for Abasement (Aba) – passive against external force
b. Need for Achievement (Ach) – need for individual achievement
c. Need for Affiliation (Aff) – positive social attitude
d. Need for Aggression (Agg) – aggressiveness
e. Need for Dominance (Dom) – dominance
f. Need for Emotionality (Emo) – frequency, intensity and tenacity of emotional expression
g. Need for Exhibitionism (Exh) – need to show off
h. Need for Sex (Sex) – need for relationship with the opposite sex.
i. Need for Autonomy (Aut) – need to escape external restrictions

Test reliability is reported in the Needs Diagnostice Test Application Summary in two ways. These are reproduced below (Table III-12, III-13).

6) Standardized adaptation test

This test is to discover secondary students' interests, problems, and needs over the course of their school life, and was produced by Kim, Ho-gwon in 1961. The original basic categories are re-classified into five categories of 160 items for middle school as follows: (1) my school (2) my home (3) my mind and body (4) my society (5) my problems; and into 8 categories of 228 items for high school: (1) at school (2) at home (3) social adaptation (4) individual adaptation (5) the future (6) health problems (7) sex problems (8) individual problems.

7) Semantic differential for self

This is composed of discriminating items for the subject himself as well as for the identi figure and also provides for concrete description of the identity figure. The semantic differential items for subject and identity figure consist of two groups of twenty adjective used for both. The index was developed by Osgood (1957) and is commonly used in other research which calls for producing items of this type (Burt, 1948; Tucker, 1951; Solomon, 1954). Dimensions of evaluation, potency and activity are equally determined by the test which incorporates common terms for evaluation. The index for the identity figure gives the following instructions to the subject: "In this period of your life, which individual do you most admire, want to emulate or seek the approval of? You may choose a living person (e.g. parents, friends, teachers, etc.) or a historic figure (e.g. poets, scholars, heroes of novels, etc.). It then asks the student to write down the name of the person selected and their relationship to that person. The contents of the adjective groups for subject and identity figure are identical.

8) Values test

The values test is based on the model of Kluckhohn and Strodtbeck (1961). A test based on this model has been used as an interview. For this study the dimensions of economy and money were added to the five dimensions proposed in the model. Each of those five has four items, while economy has three and money one, a total of twenty-four items in all. Each item is, in turn classified by three modes of value.

9) Home environment questionnaire

This contains four items for determining SES (socio-economic status): 1) the student's perception of his domestic economic situation 2) father's occupation 3) father's educational background 4) total domestic income. This data then determines a student's socio economic status.

4. Collection of Data

Data for this research was collected from June 7, 1982 to June 16, 1982. All tests used in the study were administered under the direct supervision of local junior-college and college students who were majoring in education or psychology. For training of the test administrators, researchers from the institute went out to the schools for 4-5 hour training sessions. The training was done in two ways according to the nature of the test. One type of training concerned basic procedures of test administration. This training emphasized an understanding of the fundamental principles test administrators need to be aware of, and education in attitudes for preventing rejection of the test by the students. The other type of training was technical instruction in diary analysis which made use of diaries collected from schools in Seoul for training purposes. During the training, the trainees compared their work with each other to increase reliability.

In administering the actual tests it was considered too much for a student to take all the tests, so each subject took only two or three kinds of test. A test took from 40 to 50 minutes according to the nature and length of test. TAT was given by institute researchers due to the difficulty in administering the test. All testing was done in class in the morning, and in the afternoon, institute researchers and diary analysts, analyzed diaries. The time schedule for testing can be seen in the table below (Table III-14).

5. Analysis of Data

Analysis of data was done in two parts.

A. Analysis of Free-Response Questionnaires

College students and graduate school students graded diaries, compositions and TAT after prior training. Diaries and compositions were graded to find related emotions according to the dual discriminating diagram, with two people analyzing the same contents to ensure accuracy. On the other hand, TAT was too difficult to maintain reliability of testers with only minimal training due to the nature of the test and therefore TAT analysts underwent six hours of training per day for an entire week. For training purposes, answers of students who answered frequently to the TAT were used to save time, since these answers had already been analyzed and did not need to be done again. As a result of one week of training, the concensus of analysis diagram based on consensus on four cases is as follows: (Table III-15).

As we see above, in most cases reliability was high, but some analysts were low. We therefore formed teams of two analysts-one with a high rating and one with a low one and they analyzed TAT together as was done in the analysis of the diaries and compositions.

B. Analysis of Objective Test Data

For the objective tests, we designed answers that could be easily encoded for computer, and after punch cards had been prepared by Korea Electronic Computer Company, the data was processed by means of the SPSS (Statistical Package for the Social Sciences) computer program. Analysis of data for each test is as follows:

1) Test of logic development

First we graded for each type of logic, next we synthesized the grades, and then we analyzed them according to the stages of cognitive development.

(A) Analysis by logical type

All 13 items were broadly classified into five types of logic. Items and method of measurement of logical types are as follows: (Table III-16).

(B) Analysis by congnitive developmental stage

We synthesized the grades for logic and classified stages of development. We synthesized the grades for logic and classified stages of development into early and late period of concrete operation and early and late period of formal operation. Correspondence of grade to cognitive development classification is as follows:

0 points	:	early concrete operational stage
1-4 points	:	late concrete operational stage
5-12 points	:	early formal operational stage
13 points	:	late formal operational stage

2) Questionnaire of student concerns

Frequency and percentage of each independent variable of each item were counted.

3) Diary

We made a standard dual divisional diagram for analysis of the diary and we set up a diary analysis diagram which divides the contents dually into contents (concerns and themes) and related emotions. We then synthesized and managed the data from the diary analysis diagram, retaining the dual division. The results were compared and analyzed according to grade, sex, and region.

4) Compositions 1 and 2

In the case of compositions 1 and 2, first the contents of the compositions were analyzed and the main contents confirmed, and they were then classified on the basis of a standard of analysis. The standard of analysis made use of 15 of the items used for analysis of the contents division of the diary (refer to dual division diagram for analysis of diary). For the compositions we used the standard dual division diagram for analysis of diary and classified by contents and emotion. Again, the results were compared and analyzed according to grade, sex and region.

5) Thematic Apperception Test (TAT)

We used a needs-press analysis method based mainly on the methods of Murray (1943) and Stein (1948). According to the method, data was classified according to needs and press and then analyzed on the basis of three standards–kind, object and level. Accurately speaking, kinds of needs and press were classified into 35 kinds, each objects were classified into four branches (things, activities, persons, ideas), and the level was classified into four degrees according to the level of reality and imagination. The results of the analysis were diagrammed by kind, object and level, and at the same time a dual division diagram of needs and press was employed and data synthesized and arranged. Results were compared according to

sex and schools. The standard of analysis used for management of the data is as follows: (Table III-17).

6) Standardized needs diagnostic test

Mean and standard deviation of each dependent variable of the nine variables of needs were counted and ANOVA employed.

7) Standardized adaptation test

We selected the matters of greatest concern by employing items from the standard adaptation test and we then computed frequency and percentage according to schools and sex.

8) Semantic differential for self

We analyzed each item of semantic differential for self and identity figure employing factor analysis.

9) Values test

We computed frequency and percentage for each independent variable for three types of values and seven levels of values, employing chi-square test.

IV. RESULTS

1. Cognitive Characteristics

A. General Tendencics of Logic Development Test

1) Tendency by Age and Grade

Thirteen items of the logical development test are composed of five factors which represent the types of logical thought–proposition, probability, combination, two-dimensional reasoning and seriation. We excluded items for measurement of seriation from the results of the test because all the students answered them correctly,[1] which indicates midle and high school students have already passed the early stage of concrete operation. In interpreting the results of logic development, it was decided that 2 points (perfect score) for each type of logic indicates complete establishment of that type, approximately 1 point indicates the transitional period of establishment, and under 0.5 points indicates it is unestablished. As a result of the logic development test, mean and standard deviation and F ratio the primary variable of age appears as shown in Table IV-1 .

According to Table IV-1, proposition, probability, combination and two-dimensional reasoning display increased development with increased age ($P < .001$). Propositional logic and probability, out of the primary variables, showed the lowest score among 12, 13 and 14 year olds (0.21-0.48), even at the age of 15 or 16, development

1) The actual results of the test showed one or two failures, but these were regarded as measurement errors in the group test and the actual establishment of seriation would need to be established by individual testing. We assumed that normal middle and high school students have obtained the concept of seriation.

is generally low. On the other hand, in the case of combination and two-dimensional reasoning, at the ages of 12, 13 and 14, students are in the transitional period of establishment (0.71-1.04) and even at the age of 15 or 16 do not exceed that period (1.09-1.43).

From these results, we conclude that of the formal thinking variables, combination and two-dimensional reasoning develop relatively early, while proposition and probability development comparatively late.[2)]

As we see in Table IV-2, test scores in proposition, probability, combination and two-dimensional reasoning tend to increase with school year ($P < .001$). As with the tendency towards development with age, the establishment of combination and two-dimensional reasoning is earlier than that of proposition and probability in relation to school year (grade). In the third year of middle school, proposition and probability are for the most part unestablished, while combination and two-dimensional reasoning are near the transitional period of establishment. In the second year of high school, two-dimensional reasoning tends to be completely established, probability and combination in the transitional period and proposition generally unestablished.

2) Tendency by Region

From the results shown in Table IV-3 the regional difference of each primary variable of logic development proves to be significant. In the case of middle and high school students from large cities, development of all four types of logic is comparatively faster than it is in the middle and small cities or rural areas. On the other

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2) For an analysis to determine the percentage of students capable of logical thinking refer to "Research Report on the Development of Scientific Thinking of Elementary and Middle School Students" (1982), reported by the Scientific Education Laboratory of this institute.

hand, in comparison with in large cities rural areas show a reasonable difference. The results indicate that social factors influence cognitive development.

3) Tendency by Sex

The difference in logic development by sex is reported in Table IV-4 (below). In proposition, the level of development of female students (0.54) tends to be higher than that of males (0.45) ($P < .001$). In the formation of the concepts of combination and two-dimensional reasoning the males are superior to the females. Generalizing from these results, we conclude that during the period of development of logic there is a difference between males and females according to the type of logic.

4) Tendency by Socio-Economic Status (SES)

The difference in logic development according to SES can be seen in Table IV-5 (below). According to the results shown, it appears that the higher the SES, the higher the level of formation of the concepts of proposition, probability, combination and two-dimensional reasoning ($P < .001$). For the concepts of combination and two-dimensional reasoning even when SES is low, transitional characteristics of formation are evident. On the contrary, in the case of proposition and probability, if SES is low, level of formation of the concepts is also relatively low. The results here suggest that environmental factors have a reasonable influence on the formation of logical thinking.

B. Stage of Cognitive Development

1) Stage of Cognitive Development by Age

After analyzing the scores of the test of logic development, the results were used to create a diagram of cognitive development by age based on Piaget's stages of cognitive development. This is repre-

sented in Table IV-6. From these results we find that most students remain in the concrete operational stage, at the age of 12, the data show that of "599" students, 64.6% are in the late concrete operational stage, while 35.1% have reached the early formal operational stage. At the ages of 13 and 14, the ratio of students at the late concrete operational stage to those at the early formal operational stage is approximately equal. At the ages of 15 and 16 we now find 70% of the students have reached the early formal operational stage, although those who have achieved the late formal stage comprise only 1.3%.

Piaget claimed that 7 year old children are at the concrete operational stage and 12 year olds have reached the early formal operational stage. This would mean that middle and high school students, who are from 14 to 18 years of age, could be assumed to be in the later formal operational stage. But the results of many studies that have measured secondary school students on the basis of Piaget's theory (Han Jong-ha, 1977; Lawson and Renner, 1974; Hi gins-Trenk and Gaife, 1971; Pale, 1970; Karplus and Karplus, 1970; Karplus et al, 1975; Renner et al, 1977) show that most middle and high school students do not reach the formal operational stage but remain at the concrete operational level. The cognitive development level of Korean secondary students in this research also does not coincide with Piaget's predictions but displays similar results to the studies cited above. It can therefore be interpreted that cognitive development in American and European secondary school students is similar to that of Koreans.

2) Stage of Coganitive Development by Grade

According to the results of the test of logic development, the level of cognitive development of middle and high school students according to grade is as given in Table IV-7. The results show

that students in the first year of middle school, 69.8% are in the late concrete stage, 30.1% have reached the early formal stage and 0.1% the late formal stage. In other words, most first-year middle school students are in the concrete operational stage and display characteristic thinking of that level. In the case of second and third-year middle school students, the percentage figure for students who have reached the early formal operational stage is 48.8 and 52.1 respectively, which demonstrates that the number of students at the formal operational stage tends to increase with school year. Even so, approximately half of the students still remain at the late concrete stage. In the case of first and second-year high school students, 76.1% of first-year and 77.5% of second-year students have reached the early formal operational stage, so it appears most students have reached this level by high school. But only 2.3% of first year high school students and 0.8% of second year high, school students have reached the late formal stage, while 21.6% of first year students and 21.7% of second year students still remain at the late concrete operational stage. These results seem to agree with those of foreign studies. Lawson and Renner (1970), who administered Piaget's test to middle and high school students in Oklahoma, found that 83% of 7th, 77% of 8th, 73% of 9th, 71.1% of 11 th, and 66% of 12th year students had not attained the formal operational level of thinking. And according to the study of both the foreign research and this study are relatively lower than graders in Oklahoma high schools, 57.1% of the students were at the concrete level and less than 11% had reached the late formal operational stage. In comparison with these foreign studies, it appears that the percentage of Korean students who have reached the early formal operational stage is comparatively high, while the percentage reaching the late formal operational level is comparatively low. But the results of both the foreign research and this study are relatively lower than Piaget's predicted cognitive levels for school year, and also they

are in agreement that the majority of adolescents do not reach formal thinking levels until the age of 16 or the latter half of the teenage years.

3) Stage of Cognitive Development by grade and Region

The variation in cognitive development of secondary school students by grade and region is shown in Table IV-8. The data indicate, despite a few discrepancies, that cognitive development increases with grade although there are differences in development by region. While 59.3% of first year middle school students from large cities have reached the late concrete stage, the comparative figures for students from middle and small cities and rural areas are 72.5% and 79.6% respectively; in short, the level of development in rural areas is relatively low. In the case of large city third year middle school students, approximately 70% have attained the formal operational stage, but for tose students in middle and small cities and in rural areas only about 40% have done so. As for high school, we assume that the reason why there is little difference between large cities and middle and small cities, and why intellectual levels in middle and small cities appear a bit high, is that in the large cities the entrance system for high school is equalized but in some of the middle and small cities the effects of unequalized schools in fluenced the results.

4) Stage of Cognitive Development by Age and Region

The variation in cognitive development in secondary school students by age and region is shown in Table IV-9. As in cognitive development by school year and region, development here varies with age and region. In the case of 12, 13 and 14 year old students from middle and small cities and rural areas, we find they have all reached a similar level of cognitive development, but com-

parison to students from large cities points out a serious gap. But the data show that by the ages of 15 and 16, this gap has become very narrow. This phenomenon appears to be due to the influence of data collected from high schools in middle and small cities where students entered unequalized by entrance exam. This also is explains why there are more 15 and 16 year old students at the late formal operational stage from middle and small cities than from large cities.

2. Affective Characteristics

A. Emotion

Analysis of the general emotions of middle and high school students was made by use of their diary. In schools where diaries were collected, diaries spanning seven days were selected from five students for each grade from among all collected diaries, based upon sincerity and duration and these were then analyzed. In those schools where diaries were not collected we selected the same number of compositions written according to the instructions, "Write a diary about your activities yesterday." The results of the analysis of these two types of diary and the statistical management of the data with regard to emotion and content are as follows: (Table IV-10, IV-11).

As the Table shows, the main emotions of middle school students are (1) resolution, will (18.1%), (2) pleasure, delight, exultation (10.9%), (3) worry, dissatisfaction, discontent (8.7%), (4) hope, supplication, yearning (7.8%), (5)self-condemnation, regret, pain (7.6%) (6)displeasure, anger, rage (7.6%) (7) amicability, comradery (6.3%) and (8) pride, vanity, conceit (5.4%). For high school students they are (1) resolution, will, (21.1%), (2) self-condemnation, regret (9.2%), (3) worry, dissatisfaction, anxiety (9.0%), (4) amicability, comradery (7.3%), (5) pleasure, delight, exultation (7.3%), (6) hope, supplication, yearning (6.2%), (7) displeasure, anger, rage (4.9%) and (8) loneliness,

melancholy (4.6%). From these results, when we divide the first ten ranking emotions into pleasant emotions and unpleasant emotions we find that for middle school students 51.7% of the emotions are pleasant and 28.2% unpleasant, while for high school students pleasant emotions account for 45.9% and unpleasant emotions 31.9%. Thus high school students experience more unpleasant emotions. This suggests that they experience mental conflicts from problems in their studies, choosing a direction in life, forming values, sexual difficulties, etc. It is also assumed that from the perspective of development theory, the cause of the disproportionately high ratio of unpleasant emotion in middle school and high school students is related to the high tide of emotion and instability which characterize the adolescent.

When we consider the differences between middle and high school students from the results seen above, we find that high school students, in comparison with middle school students, tend to experience the emotions of loneliness, melancholy, love with members of the opposite sex (which is a form of affection) and resolution more often, while the emotions of pleasure, exultation and delight, anger, displeasure and rage are experienced less frequently.

From investigation of the contents (theme) related to each emotion in the Tables, we see that middle school students' emotions result mainly from school life, study, relations with family and relatives as well as with friends and from leisure time and hobbies. High school students experience their emotions from school life, study problems, relations with family and relatives, views of life and values and relations with friends. The order of frequency for combinations of theme (contents) and emotion in middle school students shows the highest frequency for study-resolution (7.4%), followed in descending order by study problems-self-condemnation, worry. (3.6%), school life-pleasure, delight (3.5%), school life-displeasure, anger (2.9%) and study-self-condemnation, regret (2.4%), indicating school life and study as the main sources of emotion.

Other theme-emotion combinations show that from relations with family and relatives they experience delight, pleasure (1.9%), love (1.9%), resolution (1.7%); from relations with friends, amicability, comradery (1.9%), displeasure, anger (1.5%); from leisure time and hobbies, delight, pleasure (2.0%) and from view of life and values, motivation for achievement and resolution (1.7%). In the case of high school students, resolution about school life shows the highest frequency at 5.9%. This is followed by resolution about study (5.3%), worry, dissatisfaction about study (3.8%), self-condemnation, regret about study (2.6%), amicability, comradery about friends (2.9%), resolution about view of life and values (2.6%), self-condemnation, regret about view of life and values (1.5%) and love for the opposite sex (2.4%), affection (2.0%) and resolution (1.6%) about relations with family and relatives.

The tendency of emotion in middle and high school students by sex and grade as given in Table IV-12 and IV-13, shows that the emotion of resolution tends to rank high with males, while hope and yearning rank high with females. Variation with school year shows that in the lower classes of middle school, delight and pleasure rank high and in high school self-condemnation and regret are relatively frequent.

B. Interests

1) Main Daily Routines on Weekdays and Holidays

(A) Main Daily Routines on Weekdays.

Students' main daily after-school routines for weekdays are shown in Table IV-14 and IV-15 (below.) According to this data the main routines of middle school students from after school until going to bed are review and preview (of school work) (26.7%), housework (20.8%), watching TV and reading newspapers (18.6%), spending time with

family (6.7%) and sports (5.6%). The order for high school students is review and preview (27.1%), watching TV and reading newspapers (16.2%), listening to music and radio (14.0%), housework (11.9%) and napping or resting (5.6%). The tendency by school year shows that review and preview dominates continuously irrespective of school year, while housework tends to decrease little by little as school year increases. The reason sports disappears from the first five in the third year of middle school is because of the characteristics of students' development. In tendency by sex we find that for middle school students, review and preview ranked first with males at 28%, while housework was first among females at 29.3%. 5th rank for males was sports with 10.5%, and for females, listening to music and radio, elected by 5.4%.

For high school students, review and preview occupied the first rank irrespective of sex, but the weighting was quite different, 35.5% of the males chose it, which was much higher than the 18.6% of females selecting it. In the fifth rank, males chose sports (6.2%) and females opted for spending time with the family (7.5%).

In general, we find that males study more and spend more time on sports, watching TV and reading newspapers than females and females spend more time than males on housework and with the family.

(B) Main Daily Routines on Holidays

The main daily routines on holidays can be seen in Table IV-16 and IV-17 (below). The figures show that all middle and high school students spend a great deal of time taking care of housework and watching TV and reading newspapers. Those activities preferred next in the case of middle school students were review and preview (11.0%), sports (9.7%), and religious activity (8.1%), while for high school students they were religious activity (15.2%), sports (7.8%) and preview and review (7.6%).

By grade, there was a tendency for an increase in those spending time on religious activity on holidays as grade increases. Less markedly, there was a tendency also to increase time spent with friends and a decrease in time spent with family as grade increases. This seems to confirm the tendency in late adolescence to increase religious activity and for the increased influence of friends rather than family.

When we examine the tendency of activities by sex, we find that male students tend to spend time on sports (17.8%), watch TV and read newspapers (17.5%) and take care of housework (13.6%), while female students' responses show that they do housework (22.4%), watch TV and read newspapers (17.7%) and review and preview (12.6%). The data also show that females tend to spend more time on religious activity (9.6%) and review and preview (12.6%) than do males. Male high school students spend most of their time watching TV and reading newspapers (15.4%), engaged in sports (14.4%) and taking care of housework (13.0%), while females spend most of their time with housework (19.0%), religious activity (18.2%) and watching TV and reading newspapers (15.9%). These results are similar to those for middle school, but high school students, male and female, tend to spend more time on religious activities than middle school students and male students in both cases do more review and preview than famales. When holiday daily routines are compared to weekday routines, we find that students tend to spend comparatively less time on review and preview on holidays than they do on weekdays, while religious activity is greater on holidays than during the week.

2) Main Problems

(A) Problems of Greatest Concern

According to Table IV-8, the problem of greatest concern to both middle and high school students, is study problems, with high school

students responding higher (39.0%) than middle school students (28.1%). The problem of next greatest concern is health and physical condition for middle school students (20.2%), and for high school students it is future direction and choice of occupation (10.8%). For middle school students this is a period of rapid physical and sexual maturing and so the concern over health and physical condition increases. High school students, on the other hand, are concerned over their imminent entry into society and college.

The tendency for problems of greatest concern to vary with grade is shown in Table IV-18. While concern over study problems maintains the highest position throughout, it becomes more heavily weighted as grade increases. Concerns for health and physical condition on the other hand, decrease. The decrease which is shown for concerns over friends and friendship can be interpreted as the result of a rounding and broadening of relationships with friends over time. In the case of middle school students we find concerns over external appearance, features and clothes predominate, related to physical and sexual maturing, while high school students respond that they are more concerned with their own personality and identity than the middle school students are.

In tendency by sex (Table IV-19), middle school students indicate their greatest concern is over study, and next, over health and physical condition, irrespective of sex; but from the perspective of weighting, females are more concerned with study and males with health and physical condition. Male middle school students show much concern over hobbies and leisure, but by the third year, concerns over entry into high school and future direction tend to increase. Middle school females show a great deal of concern over external appearance, features and clothes–remarkable more than the males., and this concern seems to show a general increase in middle school, while decreasing slightly in high school. Third year middle school males tend to show an increase

in their concern over future direction and choice of occupation relatively higher than do females. In their concern over friends and friendship, both males and females rate high but females show greater concern than the males in the first two years of middle school. Concerns over friends of the opposite sex and over sex itself are shown to be high in males, especially during the third year of middle school when their concern is due to the period of sexual maturation. In regard to high school students, we find they exhibit the greatest concern-like middle school students-over study problems, but females show more concern than do males. Next comes concern over future direction and choice of occupation, irrespective of sex and with smilar weighting. Females tend to be concerned with friends and friendship, personality and identity and external appearance, features and clothes, while males show more concerns about health and physical condition, friends and friendship, friends of the opposite sex and sex.

(B) Problems that Most Urgently Need to be Solved

The results from three individual selections of "the problem that most urgently needs to be solved" of the standardized adaptation test of Kim, Ho-gwon were divided into five categories for middle school and eight for high school, and percentage and frequency of response were computed for each. The results are discussed below.

The results for middle school students, out of a total of 8,971 responses, were (1) my school: 3,252 (36.3%), (2) my home: 993 (10.4%), (3) my mind and body: 1,351 (15.1%), (4) my society: 1,052 (11.7%) and (5) my problems: 2,383 (26.6%). For high school students, the results out of 5,652 responses were (1) at school: 1,624 (28.7%), (2) at home: 346 (6.1%), (3) social adaptation: 558 (9.9%), (4) individual adaptation: 671 (11.9%), (5) the future: 899 (15.9%), (6) health problems: 440 (7.8%), (7) sex problems: 450 (8.0%) and (8) individual problems: 664 (11.7%). From these results, we can say that middle school students have many problems to solve in

the categories of "my school" and "my problems," and high school students have problems to solve in the categories "at school" and "the future." Of the 160 items for middle school and the 228 items for high school on the standardized adaptation test, the order of frequency for all items about problems that urgently need to be solved is shown in Table IV-20 and IV-21. These show that many middle school students have urgent problems with study and therefore they want to make good grades and rate high in intelligence. They also show a great deal of concern over the future and their aptitudes. Friendship is their second most important concern and many students want to lead their own lives, which is related to the mental characteristics of puberty. With regard to health and physical condition, students want to know how to maintain good health, improve athletic ability and increase their physical stature. Related to study, they want to know how to write better compositions, and how to improve their handwriting, and they also indicate a number of needs for reading skills as well. It is not possible to compare middle school and high school data due to the difference in number and content of the items. However, in the order of frequency for high school students, the first through fourth ranks are all related to study and going to college. From this we can say that they are much more concerned with study problems than the middle school students and they are also more eager to solve problems related to their personality, such as lack of concentration, and patience, and to contribute to mankind, corresponding with their developing social consciousness. Tendencies by sex for middle school show all students want good grades and sincere friends, and males want to know how to operate machines and improve athletic ability while females want to know what their aptitudes are and want their own rooms. In high school also, students respond that they worry about study and going to college, male students wanting to evaluate their job aptitude and females indicating a number of needs.

(C) Desired Emphases in Curriculum

According to Table IV-22 and IV-23, middle school students indicate preferences for their curriculum in the order of (1) study (16.6%), (2) physical condition and health (9.5%), (3) group activity (9.3%), (4) school clubs (8.8%) and (5) hobbies and leisure (8.7%). In contrast, the high school students' responses were (1) conduct and values (17.7%), (2) future direction and choice of occupation (13.9%), (3) study (11.1%), (4) hobbies and leisure (8.7%) and (5) friends of the opposite sex and sex (10.5%). Tendencies by grade show that students who want to emphasize study predominate in the first year of middle school and decrease thereafter. Emphasis on health and physical condition is greatest in the second year of middle school and decreases in high school. As for group activity, all middle school students emphasize it highly. From the third year of middle school, conduct and values and friends of the opposite sex and sex are increasingly emphasized. Hobbies and leisure is equally emphasized throughout middle and high school, although it tends to be slightly higher in the second half of middle school and the first year of high school. Tendencies of desired curricular emphases by sex show that in middle school, males and females emphasize study equally as their first preference. Next, male students emphasize hobby and leisure (9.2%) and females group activity (11.0%). High school males' top response was friends of the opposite sex and sex, while for females it was study. For other categories, male and female students show approximately the same tendencies.

(D) Dissatisfaction with School Life

To investigate factors which directly or indirectly hinder school studies, we let students point out the dissatisfactions they experienced during their school life. The results are contained in Table IV-24 and IV-25. The order of middle school students' responses regarding their dissatisfactions was (1) facilities, equipment and furnishings

(20.3%); (2) audio-visual and supplementary material (12.3%), (3) junior-senior relations (8.7%), (4) classmates (8.3%), (5) playground and athletic equipment (6.3%). For high school students the order was (1) facilities, equipment and furnishings (17.6%), (2) audio-visual and supplementary materials (14.6%), (3) textbook contents (9.9%), (4) extra-curricular and group activity (7.1%) and (5) rules and regulations (6.3%). By synthesis of the results we find that middle school students' main dissatisfactions are with the physical conditions of the school, such as equipment, facilities, playground, and athletic equipment, and on items relating to the learning situation, such as relations with friends and audio-visual and supplementary material. High school students show about the same response as middle school students, but show more dissatisfaction with aspects of the system, such as rules and regulations and group activity, and they point out especially, the contents of the textbooks. In tendency with regard to grade we find that in the first year of middle school, dissatisfaction over junior-senior relations (12.4%) and classmates (11.8%), along with facilities, equipment and furnishings, appears much more than at any other school year. We assume that these dissatisfactions are the result of the process of adaptation to new school surroundings, since they decrease as grade increases. The reason for their dissatisfaction with library facilities and the amount of books available may actually be due to lack of books and proper facilities, but we also suspect that no books or facilities would be able to satisfy their intellectual needs due to their lack of emotional maturity and still-developing identity. Dissatisfaction with teaching and with the behavior and guidance of teachers, has a tendency to increase from the third year of middle school, and from the developmental standpoint it seems to be caused by the characteristic adolescent tendency for criticizing and evaluating the older generation, including parents and teachers. The characteristic tendency of high school students is their dissatisfaction with the content of their textbooks (10.2% the first year, 9.6% the second year)

which is in marked contrast to middle school students. We cannot be certain of the actual reasons behind their dissatisfaction, but according to Ahn, Kwi-dug et al. (198), students' main responses as to their reasons for disliking certain specified subjects, were that the contents were uninteresting and not suited to their aptitudes (45.7%) and that the contents were too difficult (25.9%), so from these responses (71.6% of total) we believe that the selection and organization of curriculum and materials must consider the variables of teacher behavior and student preferences. The comparative difference of these results with middle school students can be explained by the high school students' immediate concern for the contents of material related to going to college. In regard to high school students, dissatisfaction with extra-curricular and group activity is quite high. This can be interpreted as an expression of their needs to build solid relationships with the opposite sex, and to form well-rounded relationships with others through experience in various group activities.

The tendencies for various dissatisfactions according to sex shows that while male middle school students show great dissatisfaction over junior-senior relations (males 13.0%, females 4.5%), females display greater dissatisfaction over library facilities and the amount of books (males 4.1%, females, 6.1%). There is no great difference by sex in high school students, but females seem to be more dissatisfied over facilities and equipment (males, 8.5%, females, 11.2%) and with their classmates, while males show more concern over junior-senior relations.

3) Favored Activities and Contents of Conversations

(A) Favored Activities

Forty-five female and forty-five male students from each school year were arbitrarily selected to write compositions on the theme. "If you had a ten-day vacation beginning tomorrow without any school

restraints and unlimited expenses, what would you do? Why?" The analysis of these compositions provided the results of students' favored activities, which are given in Table IV-26 and IV-27 (below), show that the favorite activities of middle school students are (1) hobbies and leisure (40.7%), housework (16.2%), (3) social activities (14.8%), (4) studying (8.9%) and (5) sleep and relaxation (5.2%). For high school students the results were (1) hobbies and leisure (38.6%), (2) social activities (12.5%), (3) housework (11.7%), (4) studying (8.4%) and (5) spending time with friends (5.8%). From the results we find that middle and high school students seek various types of experience, the beauty of nature and human affection and to develop independence and patience through hobbies such as reading, travelling, sports, hiking, etc. removed from their school life. Next we find many students who show an affinity for housework and time with the family; this is especially true among middle school students and particularly female and rural students. We find that social activity appeals to all students-30% desiring to help the needy in such places as homes for the aged, orphanages and leper colonies. Many students also indicate a desire to broaden their social knowledge and experience through visits to such representative examples of national culture and development as industrial complexes, broadcast facilities, the DMZ (Panmunjum), national historical sites and sites of national heritage. The proportion of students who wish to study subjects in which they experienced difficulties, and those interested in exploring areas of interest, are similar–8.9% of middle school students and 8.4% for high school students. A relatively large number of middle school students indicate a desire for naps or rest to relieve fatigue, and to care for their health, while many high school students wish to spend time with their friends in order to develop their views of life and their personalities.

In the tendency for favored activity to vary by sex, we find that males of both middle and high school are concerned with hobbies and leisure and social activities, while females want to spend time with family and relatives in addition to their interest in hobbies and leisure. Males and females show similar interests in most other categories.

(B) Contents of Conversations

Students were chosen as for the composition on favored activities, but were given the theme "If you went on a trip with your friend or talked to your friend all night long, what would you talk about? Or what, in fact, do you usually talk about?" The results of the analysis of these compositions appear in Table IV-28 and IV-29 (below). According to these, the themes of middle school students' conversations are (1) future direction and choice of occupation (19.8%), (2) hobbies and leisure (16.3%), (3) school life (12.7%), (4) friends and friendship (12.5%), (5) the other sex and sexual knowledge (10.0%), (6) study problems (8.4%), (7) family and home (7.5%), and (8) values (3.9%). For high school students, the order is (1) the other sex and sexual knowledge (7.9%), (2) future direction and choice of occupation (15.2%), (3) school life (10.7%), (4) friends and friendship (10.3%), (5) hobbies and leisure (9.8%), (6) values (9.6%), (7) study problems (7.8%) and (8) social views (6.3%). From synthesis of these results we find that middle and high school students both talk a great deal about future direction and choice of occupation. While middle school students' main topics are hobbies and leisure and family and home, for high school students they are the other sex and sexual knowledge and values. When we enumerate some concrete examples of these topics, we find the following:

(a) Future direction and choice of occupation—hopes and ambitions about the future, going to high school or college, one's future, college life, and career goals.

(b) Hobbies and leisure–sports, movies, television, music, reading, entertainers, travel, literature and recreation.

(c) School life–feelings towards teachers, occurences at school, difficulties, relations between juniors and seniors and benefits of school.

(d) Friends and friendship–the ideal friend, true friendship, the merits and defects of friends, the anguish and hope of friends, long-term friendship and selecting friends.

(e) The other sex and sexual knowledge–solid relations with the other sex, differences between the sexes, likeable image of the other sex, marriage, love, members of the opposite sex they are, or have been, associated with, and what they desire from adults.

(f) Study problems–how to study, study interests, exam and course grades, interesting subjects, the need for study, their abilities.

(g) Family and home–duty to parents, likes and dislikes about parents, parents' expectations and attitudes toward them, conditions at home, family problems.

(h) Values–direction in life, how to live life, philosophy, life and death, lives of great men, goals of life, the real and the ideal.

(i) Social views–the nation, materialism, autonomy, the national situation, the future of mankind, the national economy and educational situation, the older generation, irrationality of adolescents, public welfare facilities for students, their relationship to the nation.

The tendency for variation in contents of conversation by grade shows for the themes of future direction and choice of occupation. friends and friendship, school life and study problems that there is no change as school year increase. On the other hand, the frequency of discussions of hobbies and leisure increases with increase in grade.

In the first and second years of middle school topics include science fiction, traditional tales, ghost stories, riddles and interesting stories. As we move to a higher grade, especially from the third year of middle school, conversations about the opposite sex and sexual knowledge rapidly increase in both frequency and proportion. Middle school students talk increasingly about family and home as grade increase, and conversations about social views and values tend to increase in proportion.

In the tendency by sex, we find that in males the proportion of conversations about future direction and choice of occupation, study problems, and social views are higher than for females, while for females, the frequency of conversations about the other sex and sexual knowledge, friends and friendship and family and home is comparatively greater than in males.

4) Things They Want to Possess and Goals they Wish to Obtain or Accomplish

(A) Things They Want to Possess

Analysis of the responses of students to the question, "What is the one thing you want to possess most now?" is shown in Table IV-30 and IV-31 (below). We can see that middle school students named bicycles (14.9%), books (10.7%), sports and leisure equipment (10.4%), electronic products (9.8%), and musical instruments like pianos (8.8%), while high school students selected electronic products (18.0%), books (12.7%), pianos and similar musical instruments (12.0%), motorcycles (8.5%) and drums and similar instruments (5.5%). The tendency of these results by grade shows that the proportion of students selecting bicycles, which are rated first by first year middle school students, decreases as grade increases-the older students preferring motorcycles or electronic products. As grade increases, the desire for sporting goods decreases, but the desire for books remains high irrespective of school year. Females want to possess musical instru-

ments like pianos in high proportion irrespective of grade.

Tendency by sex shows a definite difference in preference between males and females. While males prefer objects related to outdoor activity such as bicycles, sporting goods, leisure equipment and motorcycles, females want to have objects related to aesthetic activities, such as musical instruments, electronic products and books. The tendencies of high school students are similar to middle school students, but males tend to increase their desire for electronic products and motorcycles considerably as grade increases. Female students want to possess musical instruments and books much more than males, and also indicate the desire for their own house, garden or room.

(B) Goals They Wish to Obtain and Accomplish

The order of frequency of free responses of students when questioned as to the one object they wanted to obtain or accomplish, is shown in Table IV-32 and IV-33 (below).

In goals related to various categories of interest, we find the following results. Related to future direction and choice of occupation, obtaining the job of their choice and achieving high honors such as a Nobel Prize had the highest proportion at 46.8% and next, improvement of grades and getting into college (20.1%). Following that come goals relating to hobbies and leisure, including world travel and space travel (11.6%), social view goals including unification of North and South Korea and construction of a great society (7.7%), and family harmony and health (3.5%). For high school students, obtaining their career goals and gaining high honors ranked first at 35.0%. Then come improvement of grades and getting into college (28.3%), hobbies and leisure related goals (9.2%), developing a rounded personality (5.9%) and unification of North and South and achievement of a great society (5.4%). The results show that the goals of middle school and high students are similar, but propotionately, middle school students want success in their future career more, and high school students

want improved grades and admission to college relatively more, and while many middle school students want family harmony and health, high school students show more interest in rounding their personality. In tendencies by grade, although obtaining of chosen career and winning high honors remains throughout in first place, its proportion decreases as grade increases. The desire for improved grades and getting into college however, tends to gradually increase with grade. These tendencies are related and we can assume that as students move up in grade, obscure hopes and ambitions for the future become more realistic and concrete. In the early part of middle school, relatively many students hope to achieve unification of North and South Korea. By the third year, related to personality and values development, there is an increase in their goals pertaining to future direction and personality development.

Tendency by sex indicates males in middle and high school prefer obtaining their desired job and winning high honors, while females want improvement of grades and getting into college more. There is also a characteristic tendency for relatively many females in middle school to want family harmony and health. In other areas, male and female responses tend to be similar.

C. Needs

1) Results of TAT

TAT (Thematic Apperception Test) can be analyzed in several ways, but this study is based on Murray's personality theory and analyzes the results of TAT according to his method of needs press analysis which is inseperably related to the history of the development of TAT.

The main factors for the method of needs-press analysis are (1) Hero (2) Need (3) Press (4) Cathexes (5) Inner States (6) Standard of

Expression of Act (7) Outcomes. Here we shall suggest only the results of the analysis of need, press, inner states and outcomes, which are most related to analysis of the needs of middle and high school students.

(A) Types of Need

Analysis of theme is a basis of TAT, and theme arises from the relationship between individual need and press—that is, interaction between an individual and circumstances. In general, a subject identifies himself with a hero, so we can hypothesize the hero's need is the same as the subject's, press on the hero is the same as the subject's, and exerts influence upon the subject, and expressions of the hero's goals, actions and emotions are the same as the subject's.

The hero's need can be divided, for convenience's sake, into (1) needs arising from external things which the hero confronts, (2) needs arising from relationships with people whom the hero comes in contact and (3) needs arising from the rejection of press, in other words, the hero's response to other people's actions.[3] The results of secondary students' needs projected from the hero's needs are given in Table IV-34. We see that the order of the main needs of middle school students is achievement (34.8%), affiliation (15.2%), nurturance (8.4%), acquisition (6.9%), counteraction (5.3%), attack (4.1%), and autonomy (3.8%). The order for high school students was affiliation (17.7%), nurturance (7.2%), autonomy (5.0%), acquisition (4.6%), counteraction (4.6%) and succorance (4.3%). As for the tendency of needs of secondary school students to vary by sex, male students display strong needs for achievement, acquisition, aggression and counteraction while females have strong needs for affiliation, nurturance, rejection and autonomy.

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3) Refer to Chapter III standardized needs diagnostic test concerning the kind of needs according to this type of division system.

(B) Types of Press

Stein divided press, which is the impulse arising from the hero's circumstances, into three kinds; (1) animate matter (2) inanimate objects (3) social power, press and idea. Murray and Sargent divided it as (1) personal press (2) press of circumstance (3) inner press.

This research analyzes the result of TAT according to the division of press[4] in "Method of Diagnosis of Personality by TAT" by Yi, Sang-no et al., which combined the divisions mentioned above into (1) personal press (2) press of circumstance (3) inner press (4) social power, press and idea. The result of the general tendency of secondary school students' press, projected as press of circumstance, can be seen in Table IV-35. This shows that middle school students' responses indicate main press as lack (14.2%), frustration (10.2%), dominance (9.2%), affliction (8.4%), social power, press and idea (6.0%), family insupport (5.7%) and guilt (4.9%). High school students show dominance (9.5%), lack (9.0%), frustration (8.7%), family insupport (7.5%), dominance-nurturance (6.7%) and affliction (6.4%).

The tendency of secondary school students' press by sex shows that the main press of middle school males includes lack (17.8%), frustration (14.4%), dominance (10.6%), social power, press and idea (10.3%) and affliction (5.8%) and for female students, lack (11.0%), affliction (10.8%), dominance (8.0%) and dominance-nurturance (5.6%). The main press of male high school students is found to be lack (10.1%), dominance (8.7%), frustration (6.6%), family insupport (5.7%), dominance-nurturance (5.4%) and affliction (5.4%) while females show frustration (11.0%), dominance (10.4%), family insupport (9.5%), dominance-nurturance (8.2%), lack (7.9%) and affliction (7.6%).

4) Refer to Analysis of Data in Chapter III concerning the kinds of press.

(C) Inner States

Of the inner states which a hero experiences in a story in TAT, delight, triumph, happiness, excitement, conflict, doubt, despair, pessimism, sadness and grief can be enumerated. These can be divided into the three categories of happiness, conflict and pessimism (Stein, 1958). Under these standards, the results of main inner states of secondary students can be seen in Table IV-36. We find the inner states described by middle school students to be happiness (29.3%), conflict (63.5%) and pessimism (7.0%), the main categories being conflict and happiness. In the case of high school students the trend was happiness (29.8%), conflict (58.8%) and pessimism (11.4%), the proportion of pessimistic states tending to be higher than in middle school students. In the male high school students, the proportion of happy states tends to be relatively high, while in female high school students, the proportion of conflict and pessimistic states tends to be high.

(D) Outcomes

The outcome of a story can be largely divided into three cases: the hero's needs are satisfied, and problems solved; his needs are not satisfied and problems remain unsolved; the outcome remains unresolved (Stein, 1948). The results of the analysis of TAT story on the basis of the three standards of outcome–happy, unhappy and unresolved–are shown below in table IV-37. We find that middle and high school students show high responses to happy outcomes, and high school students (16.3%) tend to identify more with unhappy outcomes than do middle school students (7.3%). As for tendency of outcomes according to sex, male students show a higher proportion of responses toward happy outcomes, and females tend to show higher on unhappy outcomes.

2) Results of Needs Diagnostic Test

(A) Comparison of Results as to Grade

We investigated each of the different variables of need, and then compared the average scores of need by grade. The results can be seen in Table IV-38 and Fig. IV-1. In theses, we see that at every year of secondary school, students' needs for abasement, affiliation, aggression, dominance, emotionality, sex and autonomy showed very significant statistical differences at $P < .001$, with needs for achievement and exhibitionism at $P < .05$. Needs for achievement and exhibitionism tend to have relative constance irrespective of school year. Needs for affiliation, emotionality, autonomy, and dominance increase little by little as grade increases. Need for sex tends to increase rapidly from the second year of middle school, and need for aggression increases up until the second year of middle school but then decreases as grade increases.

When we examine the order of mean scores of variables of need by school year we find that need for achievement shows the highest response irrespective of school year, with need for affiliation next. On the other hand, needs for dominance and aggression show relatively low responses. By the second year of middle school as compared to the first, the increase of needs for autonomy, exhibitionism and aggression, along with rapidly increasing need for sex, tends to be broad. From the perspective of developmental psychology, it might be said that this increase is related to a period of rapid physical growth and development of the secondary sexual characteristics.

(B) Comparison of Results as to Sex

The results of these comparisons can be found in Table IV-39 and Fig. IV-2. These show the needs for achievement, aggression dominance, sex and autonomy show very significant statistical differences between male and female secondary school students at $P<.001$, need

for exhibitionism at $P<.01$ and need for abasement at $P<.05$. Need for affiliation does not tend to vary much with sex. If we examine the average scores of variables for each need, we find that in need for achievement, male students tend to be high; males at 16.5% and females at 15.2%. In need for sex, there is a big difference between males (11.8%) and females (8.7%). Also in needs for dominance, aggression, exhibitionism and autonomy, males tend to be higher. Of those needs in which females proved to be higher, we can mention need for emotionality (males 12.0%, females 13.4%). It can be said that females, in other words, tend to be more easily excited emotionally, and are quick to express their emotions of uneasiness, fear, anger, love or sadness at even the slightest impetus. In addition, females tend to be higher (12.5%) in need for abasement than males (12.1%), while in need for affiliation, males and females show about the same results.

(C) Comparison of Results as to Region

The results of regional differences as to variables of need is found in Table IV-40 and Fig. IV-3. We find the needs for abasement, aggression, dominance, exhibitionism and sex show a large statistically significant difference among large cities, middle and small cities and rural areas at $P<.001$, and need for achievement shows a difference at $P<.05$; but needs for affiliation and autonomy tend to show no differences by region. In need for achievement, the highest response was from students of middle and small cities (16.1%), and then big cities (15.9%) and rural areas (15.4%). In needs for emotionality, sex and abasement, students from rural areas show the highest responses of 13.5%, 10.6% and 12.7% respectively, with decreasing results in middle and small and large cities. In needs for dominance, exhibitionism and aggression, students from middle and small cities show the highest responses at 10.1%, 10.7% and 7.7% respectively.

D. Self-Concept

1) Self-image

To investigate self-image, we made use of the semantic differential. The results can be seen in Fig. IV-4 and IV-5. Fig. IV-4 is a profile of mean scores of each item according to responses of middle school students about themselves and Fig. IV-5 shows the same data for high school students. Middle school students show positive responses to most items irrespective of school year, and only three out of twenty responses are negative. The item with the most negative responses is in regard to need for achievement (lack of ambition). One particularly striking fact is that students show more responses on the emotional side to the item on emotions. As for high school students, there are only two items—that regarding emotions and need for achievement—in which negative responses predominate, indicating that the item regarding action/passivity, for which middle school students showed the only other negative response, was positive for high school students. In the case of the item regarding need for achievement, middle school and high school students show an extremely negative response, indicating a need for guidance as to student confidence, but in general we find that middle and high school students think of themselves positively.

To investigate the composition of factors relating to self-image according to the semantic differential scales, we employed factor analysis of the data and the results are shown in Table IV-41. As a result of extracting one eigenvalue as a limit, five factors were extracted and the common variance of these five factors came to 46.4%.

The first of the five factors, designated "capable-not capable" is shown in Table IV-42. It accounts for 21.3% of the total variance, is three times as large as the second factor and includes ten items of the twenty. Factor 1 represents, with the addition of factor loading, that the higher a factor score is, the more incapable the respondents feel,

and the lower the score, the more capable. With regard to regional differences, the degree to which middle school students feel themselves capable is highest in the rural areas, then in large cities and middle and small cities ($P<.05$). For high school students the order is large cities first, then rural areas and middle and small cities $P<.05$). These tendencies are in contrast to the fact that scores of identity, in general, increase as the size of the city increases (Lee, Jae-chang et al., 1981). This seems to be due to the fact that the self-concept test and semantic differential for self scales are different. The responses for semantic differential for self come from established norms from within the individual, so we assume that students of large cities, who put standards of self-evaluation in a high position, consider themselves to be lacking in capability. As for differences by grade, middle school students feel themselves more capable as grade increases ($P<.001$). Examining difference as to SES of family, we find the lower the SES in middle school, the more capable the students feel ($P<.05$), but high school students do not show any such difference ($P<.05$).

Factor 2 (Table IV-43) includes three items, accounts for 7.5% of total variances, and is designated "gentleness." All students, middle and high school, show no difference by region. Middle school students more often consider themselves to be gentle as grade increases ($P<.005$), but high school students do not show this difference ($P<.001$). In middle school students, the higher the SES, the more they tend to describe themselves as gentle ($P<.001$), while, again, high school students show no difference in this regard. We assume that the reason for middle school students' tendency to consider themselves gentle as grade increases, is their tendency to evaluate themselves as more calm and sensitive as they grow older.

Table IV-44 shows the third factor, which includes two items and accounts for 6.7% of the total variance. This factor is designated "generosity" because it has to do with actions between the inner

world and the external world. In regional differences we find rural middle school students most often feel themselves to be generous ($P<.05$), but there are no regional differences in high school. As for differences by sex, in middle school the males show more generosity than the females ($P<.001$), while high school students do not show any difference. As we have seen in the results shown in Fig. IV-4 and IV-5, middle school students responded that they are inclined to act, but that they were gloomy. We therefore assume that in the transitional period between tending towards action and tending towards contemplation, SES and sex factors make a difference, but after the change to contemplation is completed, there is no longer a difference by SES or sex.

The fourth factor is given in Table IV-45. It includes two items from the scales and accounts for 5.5% of total variance. It is designated "realistic–idealistic". Rural middle and high school students consider themselves to be realistic and composed, but in the cities they feel themselves to be idealistic and impulsive ($P < .005$). In middle school, the image of idealistic-impulsive increases with grade, is more prevalent in females and increases with SES ($P < .05$), but there is no difference by grade, sex or SES in high schools.

Table IV-46 shows the last factor in the semantic differential scales. It includes three items and accounts for 5.4% of the total selves as progressive ($P < .05$). As for variation by grade, we find that in middle school, students feel progressive more and more with increase in grade ($P < .05$), while high school students, on the contrary, think of themselves as progressive more at the first year of school ($P < .01$) No difference by sex is found, and we find that, at least in the case of middle school students, as SES decreases, conservatism increases ($P < .001$).

2) Attitudes Toward Identity Figure

To investigate how the students feel about the identity figure, we used the items for semantic differential for identity figure. Fig. IV-6 with mean scores for each item according to middle school students' responses to identity figure. Looking at the mean of the three scores shown in the diagram, we find that most middle school students respond positively to all items except the one regarding emotion. That is, the identity figure is regarded as good, important, clever and responsile, and this tendency does not vary by school year. In examining Fig. IV-7, which shows the mean scores of responses to identity figure for high school students, we find that they, as well as the middle school students, consider their identity figure as good, important, clever, positive, capable and responsible.

The results of factor analysis to determine the structure of factors concerning the identity figure are given in Table IV-47. As a result of the extraction of one eigenvalue as a limit, four factors were extracted and the common variance of these factors was 41.9%.

The first factor, shown in Table IV-48, accounts for 19.7% of total variance, includes 10 of 20 items, and is the most representative factor. It is designated "capable–not capable" and represents, with the addition of factor loading, that the higher the factor score is, the more the feeling of lack of capability. With middle and small cities highest, then large cities and rural areas next, all middle school and high school students show responses of "capable." ($P<.05$). In response to the identity figure therefore, students from middle and small cities think of the figure as capable. There was no difference by school year or sex, so this factor is of little importance in the determination of identity figures. As for SES, middle school students think of their identity figure as capable more so with increased SES, but there is no variation in high schools.

The second factor is shown in Table IV-49. It includes four items, accounts for 8.5% of total variance and is designated "gentleness." There is no difference as to region and SES, but as to grade we find middle school students increase in their perception of the sive, good- is a profile gentleness of the identity figure as grade increases, and in high school this perception decreases as grade increases. Overall, we were unable to find any consistencies. In middle school, females thought of the identity figure as being gentle more than males and high school students showed similar responses, but there was no statistically significant difference.

Table IV-50 shows the third factor, accounting for 7.8% of total variance it is designated as "reffective–impulsive." This factor has no variation with other factors except by sex, females thinking of their identity figure as being impulsive more than males ($P<.05$).

The factor designated "activeness" is given in Table IV-51. It accounts for 5.9% of total variance. Students from rural areas and with low SES, tended to think of their identity figure as passive and sentimental ($P<.05$) but there was no difference as to school year and sex.

3) Comparison of Self-Image and Attitudes Toward Identity Figure

The results of the comparison between self-image and attitudes toward the identity figure can be seen in Fig. IV-8 and IV-9. According to Fig. IV-8, when we examine responses for self and for the identity figure with three scores of neutral value as a standard, we find that middle school students generally think positively about themselves and also that they evaluate their identity figure even more positively. Out of all items evaluated, we find the items with the least difference between them are rational and emotional and cheerful and gloomy. Both for themselves and for the identity figure they choose cheerful

and emotional. On the other hand, the items with the greatest difference ambitious and unambitious, their response in regard to the identity figure being ambitious, but for themselves, unambitious. Items with the next highest degree of difference are composed-impulbad, strong-weak, clever-foolish and capable-not capable. In responding to these items they reveal that they find their identity figure much more composed, better, stronger, more clever and more capable.

In the case of high school students, they too think of their identity figure and themselves positively, and they consider their identity figure as more positive, their responses being similar to the middle school students. The two groups are about the same with respect to all cases but one, which is that middle school students respond that their identity figures are more contemplative than they are, while high school students think their identity figures are more impulsive than they are. Looking at this from the point of view that evaluation of the identity figure is based on self-image, these results are caused by the middle school student's preference for contemplation and the high school student's for contemplation.

4) Actual Identity Figures

Apart from semantic differential of students toward identity figures, we asked them to name someone they considered as a person they identified with. The results are given in Table IV-52 by category. Middle school students chose a famous person most often (26.7%), second, teachers (26.3%), third, a friend (19.4%). For high school students the order was teachers first (29.4%), a famous person second (27.4%) and a friend third (18.9%). From the fact that there was little difference in number between those choosing a famous person and those selecting a teacher, we conclude that most secondary students consider them equally. In these days in which the low

esteem in which teachers are held has been deplored (Edman, 1963; Ko, Hak-yong, 1980), the fact that adolescents still select their teachers to identify with a great deal of the time, seems to prove that the position of the teacher has not declined as badly as might be thought; it shows that teachers are still one of the figures most respected by adolescents. When students select a famous person as their identity figure, the actual figures named can be seen in Table IV-53, which gives the actual figures for all categories. Among famous persons selected by secondary school students, the Korean national hero Lee, Soon-shin is named most frequently and in the case of middle school students, he is chosen by 28.1%. In second place we find Edison and Einstein named equally. Both are scientists and they are chosen by middle school and high school students. From this we can see that the tendency to choose identity figures by category is similar in all secondary school students, as shown in Table IV-54. For middle school students the preferences are soldiers (23.7%), politicians (15.7%), inventors and scientists (13.2%) and social benefactors (7.7%). For high school students the results are politicians (23.6%), soldiers (7.7%). For high school students the results are politicians (23.6%), soldiers (12.3%), inventors and scientists (9.7%) and heros of novels (8.6%).

E. Values

To make clear the characteristic values of Korean secondary school students, we investigated seven types of values, including the human nature, nature, time, activity, human relational orientations, the views of economy and money.

1) Human Nature

The results of the orientation of values concerning human nature held by Korean secondary school students is given in Table IV-55.

The view that human nature is good, at 44.3%, shows the highest response, the view that it is neutral is held by 40.9%, a much higher response than other research has reported Yi Jong-jae 1981), but only a low percentage of 14.8 holds the view that human nature is evil. In general, most students think of human nature as basically good, but we find that middle school students show more division of view between good and evil than high school students, who respond a great deal to a neutral view of human nature (45.8%).

Looking closer at tendencies by grade, we see that from the first year of middle school to the second year of high school, responses of both good and evil gradually decrease with a marked incrase in a neutral evaluation ocurring. In middle school, females choose responses of good and neutral more than males, the difference especially wide between their views of human nature as evil (7.1%), females responding with evil much less than the males ($P < .001$), but we don't find this difference in high school students ($P < .05$). Again in middle school, we find that by region, the larger the city, the more the view is that human nature is evil, and in rural areas it is good ($P < .001$), but in high school, it was remarkable to find that rural students responded a great deal that human nature was evil ($P < .001$).

2) Nature Orientation

The results of the students' views on nature are shown in Table IV-56. Most secondary students held the view of mastery over nature (80.2%) but in high school, the tendency decreases gradually to a figure of 77.6% ($P < .001$). We find that as students reach high school, mastery over nature decreases and that of harmony with nature increases. When investigated as to school year, we can see this even better ($P < .001$). Females select the view of subjugation to nature more than male students, and males choose the view of mastery over nature more than females ($P < .001$). Tendencies by region show that in middle schools, students from large, and middle and small

cities respond with subjugation to nature less than rural students ($P<.001$), but in the high schools we find that large city students respond more to subjugation to nature in contrast to the middle school figures.

3) Time Orientation

To determine secondary students' views of time, we asked them whether they found the standards for their behavior in the past, present or future. As we see in Table IV-57, more than half (58.4%) of the students are inclined to the future. Next they choose the present (25.1%) and only 6.5% of the students find the answers in the past ($P<.001$). We can say from this that most Korean secondary school students believe that the future will be better than the past or present. In comparison with other research (Yi Jong-jae, 1981), which show that teachers (84.2%) and parents (90.0%) are inclined to the future, the students' response is quite low, and in light of a figure of 86.3% for students–elementary, middle and high school and college–in Yi's study, it is even more strikingly low. In this research in which the subjects are all secondary school students, we find that as grade increases the tendency to incline to the future increases as well, and that students who initially name the past, choose the present later ($P<.001$). Females, we find, are more inclined to the past than males ($P<.001$) and students in rural areas are more significantly inclined to the past than those from the cities ($P<.001$).

4) Activity Orientation

To determine student views on the values and effects of action in their lives they were asked to choose from three dimensions characterizing certain kinds of action. "Being" emphasizes the satisfaction of inner needs and impulses and self-expression and disregards self-improvement or achievement. "Becoming" on the other hand, expresses restriction of human needs and makes much of the development

6) View of Economy

Views of economy were investigated through responses eliciting attitudes toward the acts of making money, limiting the need for money and placing value on money. Responses were of three types valuing the acts as aims in themselves, means toward an end or neutral–neither means nor aims. The results are shown in Table IV-60. We find that secondary students agree that economic acts should be a means to an end (87.3%). Even though there is a difference by school year results. Females in both middle and high school, tend to think of economic acts as a means more than males, the males tending to regard it as an aim in itself ($P< .001$). In middle schools, students from rural areas have a stronger tendency to think of economic acts as aims in themselves than do students from the cities, but in the high schools on the other hand, rural students tend to consider them as means to an end.

7) View of Money

View of money was the only value that needs to be understood in a different way than the other values in that it must be regarded in relationship to values expressed first with regard to economy. Most of the students respond that if they had money they would buy what they needed (64.5%), another sizable group say that they would save it for the future (33.0%) and only a small group answered that they would spend for entertainment (2.5%). We find that the results indicate a sound attitude regarding the use of money (Table IV-61). High school students show more tendency for purchasing goods and spending on recreation than middle school students, and their responses to saving is lower than middle school students ($P<.001$). As grade increases, responses for spending for goods and for entertainment show an increase, while decreasing for saving. Female students respond heavily in favor of saving and only slightly for spending on

entertainment. In the middle schools, students from rural areas show a higher response to saving than students from other regions, but in high schools students from the large cities show the highest response to saving. Middle school rural students also show a low response for buying goods, but again it is not the case in high schools. As grade increases, the tendency for using money for spending for personal reasons rather than saving shows an increase, and females endow saving with much more value than males do. Students from rural areas respond lower in regard to spending money, but it is not clear whether this tendency results from not putting importance on spending, or from little social impetus for spending.

V. SUMMARY AND IMPLICATIONS

1. Summary

The purpose of this study was to investigate the cognitive and affective development of Korean secondary students in order to obtain the data regarded necessary for the development of curriculum and texts. We analyzed the characteristics of cognitive development according to region, school year (grade), age, sex and socio-economic status (SES), and examined emotion, interests, needs, self-concept and values in the area of affective development.

The subjects of the study are male and female students from the first year of middle school through the second year of high school, selected by stratified cluster sampling which stratified the population into those from large cities, middle and small cities and rural areas. The number of selected students was 3,164, from 54 classes of 18 middle schools, and 1,981 from 36 classes of 18 high schools. Socio-economic status was arranged into four classes by economical situation of the family, father's vocation, father's educational background and family income.

The instruments used for this study are the logical development test based on Piaget's cognitive development theory for investigation of cognitive domain, while for affective domain we made use of various instruments appropriate for investigating emotion,, needs, interests, values and self-consciousness. We used student diaries and a composition (#3) in the form of a diary for examining emotion; a students' concerns questionnaire, two compositions (#1, #2) and a standardized adaptation test for interests; a standardized needs diagnostic test and the Thematic Apperception Test (TAT) for needs; a values test for determining values; and an semantic differential for self. The researchers of this institute designed all of these test instruments except for the standardized adaptation test and the standardized needs diagnostic test.

Data collection was carried out for a period of 16 days beginning January 7, 1982 through on-site visits by the researchers. Management of the test results was accomplished by division into free response questionnaires and objective tests. The results of free response questionnaires were analyzed by college and graduate school students after a period of training, and for the management of objective test data we used SPSS (Statistical Package for the Social Sciences), a computer package program.

Following is a summary of the analyzed results.

A. Development of Logic

(1) As grade, age, size of city and SES increase, logical thinking patterns of proposition, probability, combination and two-dimensional reasoning all tend to develop.

(2) As to patterns of logic, combination and two-dimensional reasoning tend to develop faster than probability and proposition.

(3) Of Korean secondary school students, 64.6% of those at age 12, 58.1% at 13, 43.8% at 14, 30.1% at 15, and 22.6% at 16 still remain at the late concrete operational stage of cognitive development.

(4) By school year we find 69.8% of those in the first year of middle school, 51.1% of second year middle school, 47.4% of third year middle school, 21.6% of first year high school and 21.7% of second year high school remain in the late concrete operational stage.

B. Emotion

(1) As a result of analysis of the diaries, the emotional tendencies of middle school students are found to be resolution, pleasure, delight, worry, dissatisfaction, hope and supplication, and for high

school students we find resolution, self-condemnation, regret, worry, dissatisfaction, amicability and comradery.

(2) Synthesis of the 10 categories of emotion experienced by secondary school students into pleasant and unpleasant ratings shows that for middle school students pleasant emotions account for 51.7% of the responses, and unpleasant emotions for 28.2%, while for high school students, the figures are 45.9% and 31.9% respectively, indicating that high school students experience more unpleasant emotions.

(3) In general, the emotions of secondary school students are mostly related to school life and study problems.

C. Interests

(1) The main routines on weekdays for middle school students are review and preview of school work, housework, watching TV and reading newspapers; high school students routines are review and preview, watching TV or reading newspapers, listening to music and the the radio.

(2) On holidays, while middle school students spend their time taking care of housework, watching TV and reading newspapers and review and preview, high school students are taking care of housework, watching TV and reading newspapers and engaging in religious activity.

(3) Middle school students' concerns are given in the following order; studies, health and physical condition, friends and friendship and external appearance, features and clothes. For high school students they are studies, future direction, choice of occupation, friends and friendship and health and physical condition.

(4) From the results of the standardized adaptation test we find that the problems that most urgently need to be solved for secondary school students are those related to studies, friends and friendship, career and aptitude.

(5) Middle school students want study, health and physical condition and group activity to be emphasized in their school curriculum and texts, and high school students want emphasis placed on values, future direction and choice of occupation and study.

(6) Middle school students show dissatisfactions over school facilities and equipment, audio-visual and supplementary material and junior-senior relations, while for high school the problems named were facilities and equipment, audio-visual and supplementary material and textbook contents.

(7) If supplied with enough time and money, middle school students favored activities would be hobbies and leisure, housework and social activities. High school students prefer hobbies and leisure, social activities and housework.

(8) The main topics of conversation among middle school students concern their future direction and choice of occupation, hobbies and leisure and school life. For high school students they concern the opposite sex and sex, future direction and choice of career and school life.

(9)Middle school students want to possess bicycles, books, sports and leisure equipment, electronic products and pianos in that order. For high school students the order is electronics products, books, pianos and motorcycles.

(10) The goals of secondary school students are to obtain the job of their choice, to improve their grades, enter college and goals related to hobbies and leisure.

D. Needs

(1) From the results of the Thematic Apperception Test, we find that for middle school students their main needs-given in order-are

the needs for achievement, affiliation, nurturance, acquisition, counteraction, aggression and autonomy. Those of high school students are the needs for achievement, affiliation, nurturance, autonomy, acquisition, counteraction and succorance.

(2) Also from the Thematic Apperception Test, we identified the main types of press of middle school students as lack, frustration, dominance, affliction, social power, press and idea, family insupport and guilt. For high school students the order of types of press is dominance, lack, frustration, family insupport, dominance-nurturance and affliction.

(3) As the results of the needs diagnostic test show, needs for affiliation, abasement, dominance, emotionality, sex and autonomy tend to increase as grade increases, but needs for aggression tend to decrease. Need for achievement on the other hand remains consistantly high at all grade levels.

(4) The needs diagnostic test results show that while males have strong needs for achievement, aggression, dominance, sex and autonomy, for females the strongest needs are for emotionality and abasement.

The needs diagnostic test results also indicate that while rural students have a tendency for relatively stronger needs for abasement, emotionality and sex, students of middle and small cities show a relatively strong need for aggression, dominance and exhibitionism.

E. Selt-concept

(1) According to the results of the semantic differetical scales in general, secondary school students see themselves positively.

(2) As a result of factor analysis of the characteristics of self, five factors were extracted. These are designated as "capable-not

capable," "gentleness," "activeness," "realistic-idealistic" and "progressive-conservative." When comparing differences found among these characteristics according to school year, sex, region or socio-economic status, we find that middle school students are more deeply influenced by these factors than high school students. It appears that by the time they have reached high school, such external factors exert little influence on them.

(3) Test results show that the identity characteristics for the students' identity figure is more positive than for themselves.

(4) The item with the widest difference between their own identity and that of their identity figure was need for achievement, which was strong for the identity figure but weak for themselves.

(5) Factor analysis of the identity figure characteristics produced four factors which are designated as capable-not capable, gentleness, composed-impulsive and activeness.

(6) From written comments, it was determined that famous people and teachers were selected most often as the identity figure and that the most frequently named famous person was the Korean hero Lee, Soon-shin, followed by Edison and Einstein.

F. Values

The results of investigating Korean secondary students values classified into seven types are as follows:

(1) A large number of students say that they consider human nature as basically good (44.9%), but as grade increases the tendency changes to a belief in human nature as neither good nor evil, but neutral.

(2) Attitudes about nature reveal that most students (80.2%) feel that nature can be controlled, but this attitude decreases with increase in grade and gradually changes to the idea of harmonizing with nature.

(3) Student values regarding time show that more than half (58.4%) emphasize the importance of the future and this tendency increases as grade increases.

(4) Students value the attitude of becoming in their view of activity (54.1%). This emphasizes self-development, but this diminishes as grade increases, being displaced by "being" which emphasizes inner needs and self-expression.

(5) Collateral human relationships are the predominant value (54.1%) initially but give way to individual relationships as grade increases.

(6) In the students' views on economy, a large majority consider economic activity as a means to an end (87.3%).

(7) Most students respond that if they had money they would purchase necessary goods (64.5%), but a sizable number indicate they would save it for the future (33.0%). High school students tend to consider using money for personal use more than middle school students.

2. Implications

From the results of this study, the following implication suggest themselves.

First of all, measure of the cognitive level of Korean secondary school students, based on Piaget's cognitive development theory, offers important insights into the construction of curriculum, improve-

ment of teaching methods and development of educational materials. According to the research data, most secondary students never reach the late formal operational stage of cognitive development, remaining in the early formal operational stage or the late concrete operational stage. According to Piaget's theory then, learning through concrete means needs to be planned and implemented for students at the concrete operational stage and high-level abstract learning is too difficult for students at the early formal operational stage.

Secondly, the data on affective characteristics open the way for the establishment of sound affective educational aims, an evaluational standard for affective characteristics and a valuable reference for effective teaching.

If humanistic education, or education of the whole-person, which is a matter of concern and discussion everywhere today, is predicated upon the harmonious development of all human characteristics and the maximum realization of human values, then the concept is closely related to human affective characteristics. Therefore pretensions to this kind of education without an understanding of these characteristics, is only a slogan at best. One of the reasons why Korean education has been so partial to cognitive education–to the point of excess–has been due to the insufficiency of real knowledge regarding the affective domain of its students. More efforts for affective research and application of affective principles are needed.

Finally, the results of the investigation into the affective characteristics of Korean secondary school students help make clear those problems which the students face outside of their studeies–the emotional, social and philosophical problems they must confront. This understanding can therefore provide the basis for more valuable and effective guidance for the students for their future lives.

They are in a severely unsettled and unbalanced period in their lives, caught in the middle of a process of growth. It is from such

unsettled times that the problem of delinquency arises, and sound guidance is needed before difficulties occur, not after. For planning and carrying out an effective and suitable guidance program for the students, it will be immensely beneficial therefore to understand their concerns, interests, problems and troubles, which are among their developmental characteristics.

Table III-1. Parent Economic Status

Answers \ School / Grade		Total	Middle school				High school			Points
			Total	First grade	Second grade	Third grade	Total	First grade	Second grade	
We have difficulty in paying tuition.	Frequency	1,152	789	274	273	242	363	198	165	1
	%	22.5	24.9	26.9	25.5	22.7	18.4	19.6	17.0	
We don't have difficulty in paying tuition, but can't spend freely.	Frequency	2,883	1,654	508	542	604	1,229	630	599	2
	%	56.2	52.3	49.9	50.7	56.7	62.2	62.5	61.8	
We don't have any problem in paying tuition and can spend freely.	Frequency	1,096	721	237	254	220	385	180	205	3
	%	21.4	22.8	23.3	23.8	20.6	19.5	17.9	21.2	
Total	Frequency	5,131	3,164	1,019	(1,069	1,066	1,977	1,008	969	
	%	100	100	100	100	100	100	100	100	

Table III-2. Father's Occupation

Answers \ School / Grade		Total	Middle school				High school			Points
			Total	1st grade	2nd grade	3rd grade	Total	1st grade	2nd grade	
laboror, support personnel, agricultural worker, miner, driver, skilled labor	Frequency	(2,273)	(1,459)	(448)	(501)	(510)	(814)	(415)	(399)	1
	%	47.9	47.9	45.5	47.9	50.3	47.2	45.2	49.5	
restaurant, hotel & other service employees	Frequency	(312)	(202)	(71)	(65)	(66)	(110)	(67)	(43)	
	%	6.6	6.6	7.2	6.2	6.5	6.4	7.3	5.3	
retail & whole sale, sales	Frequency	(415)	(259)	(79)	(98)	(82)	(156)	(84)	(72)	2
	%	8.7	8.5	8.0	9.4	8.1	9.1	9.2	8.9	
white-collar worker, public officials (under 5th level) technician, soldier	Frequency	(703)	(450)	(173)	(140)	(137)	(253)	(134)	(119)	
	%	14.8	14.8	17.6	13.4	13.5	14.7	14.6	14.8	
high-tanking public officials (over 4th level), business and banking executive, owner of company, military officer	Frequency	(476)	(291)	(73)	(111)	(107)	(185)	(106)	(79)	3
	%	10.0	9.6	7.4	10.6	10.6	10.7	11.5	9.8	
doctor, lawyer, judge, professor, priest, researcher, professional	Frequency	(145)	(86)	(40)	(28)	(18)	(59)	(36)	(23)	
	%	3.1	2.8	4.1	2.7	1.8	3.4	3.9	2.9	
unemployed	Frequency	(165)	(96)	(25)	(39)	(37)	(64)	(30)	(34)	
	%	3.5	3.2	2.5	3.7	3.7	3.7	3.3	4.2	
other	Frequency	(260)	(202)	(76)	(63)	(56)	(83)	(46)	(37)	
	%	5.5	6.6	7.7	6.0	5.5	4.8	5.0	4.6	
Total	Frequency	(4,749)	(3,045)	(985)	(1,045)	(1,013)	(1,724)	(918)	(806)	
	%	100	100	100	100	100	100	100	100	

Table III-3. Father's Educational Background

Answers \ School / Grade		Total	Middle school				High school			Points
			Total	1st grade	2nd grade	3rd grade	Total	1st grade	2nd grade	
No formal Education	Frequency	203	155	61	51	42	48	21	17	1
	%	4.2	5.0	6.1	4.8	4.0	2.7	3.2	2.1	
Graduate of elementary school	Frequency	1,360	853	255	293	305	507	260	247	
	%	27.9	27.4	25.2	27.7	29.0	28.8	26.8	30.2	
Middle school graduate	Frequency	1,107	704	231	235	238	403	210	193	2
	%	22.7	22.6	22.8	22.3	22.6	22.9	21.6	23.6	
High school graduate	Frequency	1,285	822	267	277	278	463	251	212	
	%	26.3	26.4	26.4	26.2	26.4	26.3	25.8	25.9	
Graduate of junior college drop out	Frequency	253	141	36	46	59	112	62	50	3
	%	5.2	4.5	3.6	4.4	5.6	6.4	6.4	6.1	
College graduate or above	Frequency	670	444	160	154	130	226	127	99	
	%	13.7	14.2	15.8	14.6	12.4	12.9	13.1	12.1	
Total	Frequency	4,878	3,119	1,011	1,056	1,052	1,759	971	818	
	%	100	100	100	100	100	100	100	100	

Table III-4. Family Income

Answers \ School / Grade		Total	Middle school				High school			Points
			Total	1st grade	2nd grade	3rd grade	Total	1st grade	2nd grade	
Monthly income below 150 thousand won	Frequency	1,409	1,019	354	332	333	390	211	179	1
	%	29.7	31.1	34.8	31.3	31.4	22.0	22.3	21.9	
Monthly income from 160 thousand won to 300 thousand won	Frequency	1,867	1,264	343	394	380	750	399	351	2
	%	38.1	38.6	33.8	37.2	35.8	42.4	42.1	42.7	
Monthly income from 310 thousand won to 500 thousand won	Frequency	1,143	692	204	236	257	446	247	199	
	%	23.3	21.1	20.1	22.3	24.2	25.2	26.1	24.2	
Monthly income from 510 thousand won to 800 thousand won	Frequency	356	216	84	67	65	140	65	75	3
	%	7.3	6.6	8.3	6.3	6.1	7.9	6.9	9.1	
Monthly income over 810 thousand won	Frequency	132	88	31	31	26	44	26	18	
	%	2.7	2.7	3.1	2.9	2.5	2.5	2.7	2.2	
Total	Frequency	4,907	3,279	1,016	1,060	1,061	1,770	948	822	
	%	100	100	100	100	100	100	100	100	

Table III-5. Distribution of Students According to SES

Total points for 4 items	Number of students	Percentage	Cumulative percentage	Sum of percentage	Rank
4	336	6.7	6.7	19.6	1
5	647	12.9	19.6		
6	770	15.4	35.0	31.0	2
7	782	15.7	50.6		
8	829	16.6	67.2	29.6	3
9	649	13.0	80.1		
10	480	9.6	89.7		
11	319	6.4	96.1	19.9	4
12	197	3.9	100.0		
Total	5,009	100.0	100.0	100.0	

Table III-6. Model of Value Orientations

Orientation	Postulated Range of Variations		
Human-nature	Original sin	Neutral	Innate goodness
Man-nature	Subjugation to nature	Harmony with nature	Mastery over nature
Time	Past	Present	Future
Activity	Being	Becoming	Doing
Human relationship	Linearity	Collaterality	Individualism
View of economy	Aim	Neutral	Means
View of money	Saving	Buying goods	Spending on entertainment

Table III-7. Number of Students and Classes in Middle Schools Responding to Objective Tests by Region, Grade, and Sex

Division		Number of schools	1st grade		2nd grade		3rd grade		Total	
			Number of classes	Number of students	Number of classes	Number of students	Number of classes	Number of students	Number of students	Number of students
Large cities	Male	3	3	158	3	187	3	185	9	530
	Female	3	3	188	3	193	3	183	9	564
Middle and small cities	Male	3	3	178	3	187	3	179	9	544
	Female	3	3	165	3	164	3	179	9	508
Rural areas	Male	3	3	156	3	160	3	172	9	488
	Female	3	3	178	3	181	3	171	9	530
Total		18	18	1,023	18	1,072	18	1,069	54	3,164

Table III-8. Number of Students and Classes in High Schools Responding to Objective Tests by Region, Grade, and Sex

Division		Number of school	1st grade		2nd grade		Total	
			Number of classes	Number of students	Number of classes	Number of students	Number of classes	Number of students
Large cities	Male	3	3	163	3	156	6	319
	Female	3	3	168	3	155	6	323
Middle and small cities	Male	3	3	176	3	174	6	350
	Female	3	3	162	3	170	6	332
Rural areas	Male	3	3	169	3	161	6	330
	Female	3	3	171	3	156	6	327
Total		18	18	1,009	18	972	36	1,981

Table III-9. Number of Students and Classes in Middle Schools Responding to Free Response Questionnaires by Region, Grade, and Sex

Division		Number of schools	1st grade		2nd grade		3rd grade		Total	
			Number of classes	Number of students	Number of classes	Number of students	Number of classes	Number of students	Number of classes	Number of students
Large cities	Male	3	3	15	3	15	3	15	3	45
	Female	3	3	15	3	15	3	15	3	45
Middle and small cities	Male	3	3	15	3	15	3	15	3	45
	Female	3	3	15	3	15	3	15	3	45
Rural areas	Male	3	3	15	3	15	3	15	3	45
	Female	3	3	15	3	15	3	15	3	45
Total		18	18	90	18	90	18	90	18	210

Table III-10. Number of Students and Classes in High Schools Responding to Free Response Questionnaires by Region, Grade, and Sex

Division		Number of schools	1st grade		2nd grade		Total	
			Number of classes	Number of students	Number of classes	Number of students	Number of classes	Number of students
Large cities	Male	3	3	15	3	15	3	30
	Female	3	3	15	3	15	3	30
Middle and Small cities	Male	3	3	15	3	15	3	30
	Female	3	3	15	3	15	3	30
Rural areas	Male	3	3	15	3	15	3	30
	Female	3	3	15	3	15	3	30
Total		18	18	90	18	90	18	180

Table III-11. Instruments Used for Each Area of Research

Domain of research	Instrument
(1) Cognitive development	Logical development test
(2) Affective development	
1) Emotion	Diary, Composition (3)
2) Interests	Questionnaire of students concerns, composition (1), (2), Standardized Adaptation-test
3) Needs	Standardized needs diagnostic test
4) Values	Values test
5) Self-consciousness	Semantic differentials for self
6) Home Environments	Home Environment questionnaire

Table III-12. Split-half Reliability of Needs Diagnostic Test

	Aba	Ach	Aff	Agg	Dom	Emo	Exh	Sex	Aut
Male N = 142	.71	.81	.78	.88	.89	.82	.91	.90	.81
Female N = 139	.79	.85	.79	.88	.90	.90	.85	.82	.83

* Reliability based on Spearman-Brown Formula

Table III-13. Retest Reliability of Needs Diagnostic Test

	Aba	Ach	Aff	Agg	Dom	Emo	Exh	Sex	Aut	?	F
Male N = 333	.91	.84	.79	.84	.81	.83	.84	.76	.78	.95	.31
Female N = 281	.71	.83	.78	.84	.81	.83	.80	.81	.74	.86	.40

* Retest was done at intervals of 2 weeks

Table III-14. Testing Schedule

each grade / Session	1st class	2nd class	3rd class
1st session	Logical development test (50 min.)	Standardized Adaptation test (50 min.)	Composition (50 min.)
2nd session	Standardized needs test (50 min.)	Questionnaire of concerns (45 min.)	TAT (50 min.)
3rd session	Values test (45 min.)	Semantic differentials for self (40 min.)	

Table III-15. Degree of Concensus Between TAT Analysts Scorings and Concensus Answers (%)

Analysts	1	2	3	4	5	6	7	8	9	10	11	12
Average of 4 cases	71	66	84	81	67	83	74	71	94	82	58	71

Table III-16. Types of Logic and Method of Evaluation of Logic Development Test

Type	Items of test
1. Proposition	a. Proposition I (Item 3, 4) (1) O points: Item 3 & 4 wrong (2) 1 points: One of the two wrong and the other right (3) 2 points: Both right b. Proposition II (Item 9, 10) As for proposition I
2. Probability (Item 11,12)	As for proposition II
3. Combination (Item 2,6,7,13)	(1) O points: ½ of items answered (2) 1 points: ½ to 5/6 of items answered (3) 2 points: 5/6 of items or more answered
4. Two-dimensional reasoning (Item 8)	(1) 0 points: ½ of items answered (2) 1 points: One of the lines of the answers of width and length is changed or two blanks are changed (3) 2 points: The answers of width and length are all right
5. Seriation (Item 1,5)	(1) 0 points: One answer wrong (2) 1 points: Both answers right

Table III-17. Criteria of TAT Analysis

Classification of Needs

1. Needs from external factors	2. Needs from relationships with other people	Needs from rejection of press
(1) Achievement	(1) Affiliation	(1) Abasement
(2) Acquisition	(2) Aggression	(2) Autonomy
(3) Change	(3) Dominance	(3) Blame-Avoidance
(4) Cognizance	(4) Exposition	(4) Deference
(5) Construction	(5) Nurturance	(5) Harm-Avoidance
(6) Counteraction	(6) Recognition	(6) Defendence
(7) Exitance	(7) Rejection	(7) Inf.-avoidance
(8) Nutriance	(8) Sex	(8) Seclution
(9) Passivity	(9) Succorance	(9) Inviolacy
(10) Play	(10) Superiority	(10) Nox-avoidance
(11) Retention	(11) Similance	
(12) Sentinence	(12) Contrariance	
(13) Understanding		

Classification of press

1. Human press	2. Press of circumstance	3. Internal press
(1) Acquisition	(1) Disaster	(1) Death
(2) Affiliation	(2) Luck	(2) Illness
(3) Aggression	(3) Affliction	(3) Frustration
(4) Cognizance	(4) Lack	(4) Guilt
(5) Deference	(5) Danger	(5) Physical Inadequacy
(6) Dominance	(6) Variety	(6) Mental Inadequacy
(7) Example		(7) Operating
(8) Exposition		(8) Inferiority
(9) Nurturance		
(10) Rejection		
(11) Retention		
(12) Sex		
(13) Succorance		4. Social power, press and ides
(14) Gratuity		
(15) Family insupport		
(16) Rival		
(17) Birth of sibling		
(18) Dom-Nur		
(19) Agg-Dom		
(20) Deception		

Table IV-1. Means Scores of Logic Tests with Different Ages

Age \ Logic		Proposition	Probability	Combination	Two-dimensional reasoning
12 Age N = 599	M	0.32	0.21	0.71	0.83
	SD	0.47	0.54	0.53	0.93
13 Age N = 976	M	0.38	0.25	0.73	0.86
	SD	0.52	0.56	0.53	0.93
14 Age N = 953	M	0.48	0.43	0.91	1.04
	SD	0.61	0.70	0.56	0.96
15 Age N = 917	M	0.63	0.58	1.09	1.28
	SD	0.66	0.79	0.55	0.91
16 Age N = 871	M	0.63	0.71	1.14	1.43
	SD	0.64	0.84	0.53	0.87
Total N = 4,316	M	0.49	0.44	0.92	1.09
	SD	0.58	0.69	0.54	0.92
F		31.8	47.9	69.2	53.6
P		.000	.000	.000	.000

* Total of 2 points possible for all 4 types of logic.

Table IV-2. Mean Scores of Logic Tests Tests with Different Grades

Grade \ Logic		Proposition	Probability	Combination	Two-dimensional reasoning
1st yr of Mid. school N = 942	M	0.28	0.18	0.65	0.76
	SD	0.43	0.48	0.52	0.91
2nd yr of Mid. school N = 961	M	0.41	0.25	0.78	0.95
	SD	0.55	0.55	0.53	0.94
3rd yr of Mid. school N = 979	M	0.46	0.40	0.89	0.96
	SD	0.57	0.67	0.54	0.94
1st yr of high school N = 952	M	0.68	0.70	1.19	1.38
	SD	0.68	0.82	0.50	0.87
2nd yr of High school N = 968	M	0.65	0.71	1.10	1.47
	SD	0.61	0.85	0.56	0.84
All N = 4,802	M	0.50	0.45	0.92	1.10
	SD	0.57	0.67	0.53	0.90
F		101.9	137.9	22.5	147.5
P		.000	.000	.000	.000

Table IV-3. Means Scores of Logic Tests with Different Regions

Region \ Logic		Proposition	Probability	Combination	Two-dimensional reasoning
Large cities N = 1,704	M	0.58	0.55	1.00	1.23
	SD	0.63	0.84	0.56	0.94
Middle & small cities N = 1,560	M	0.52	0.30	0.96	1.10
	SD	0.64	0.80	0.64	0.96
Rural areas N = 1,598	M	0.41	0.28	0.78	0.98
	SD	0.56	0.61	0.55	0.96
All N = 4,802	M	0.50	0.44	0.91	1.11
	SD	0.61	0.75	0.58	0.95
F		44.8	63.4	83.8	48.5
P		.000	.000	.000	.000

Table IV-4. Mean Scores of Logic Tests with Different Sexes

Sex \ Logic		Proposition	Probability	Combination	Two-dimensional reasoning
Male	M	0.45	0.59	0.98	1.12
N = 2,125	SD	0.58	0.83	0.56	0.95
Female	M	0.54	0.32	0.86	1.10
N = 2,677	SD	0.63	0.64	0.59	0.95
Total	M	0.50	00.46	0.92	1.11
N = 4,802	SD	0.61	0.74	0.58	0.95
F		67.2	110.9	7.6	5.8
P		.000	.000	.006	.016

Table IV-5. Mean Scores of Logic Tests with Different SES

SES \ Logic		Proposition	Probability	Combination	Two-dimensional reasoning
Low	M	0.39	0.32	0.79	0.96
N = 886	SD	0.56	0.65	0.57	0.96
Middle-low	M	0.48	0.39	0.87	1.08
N = 1,410	SD	0.61	0.71	0.57	0.96
Middle-high	M	0.54	0.50	0.97	1.16
N = 1,337	SD	0.62	0.79	0.59	0.95
High	M	0.58	0.54	1.01	1.22
N = 899	SD	0.65	0 84	0.60	0.94
All	M	0.50	0.44	0.91	1.11
N = 4,532	SD	0.61	0.75	0.58	0.95
F		19.1	19.1	28.4	10.7
P		.000	.000	.000	.000

Table IV-6. Proportions of Students to the Cognitive Development Stage by Age

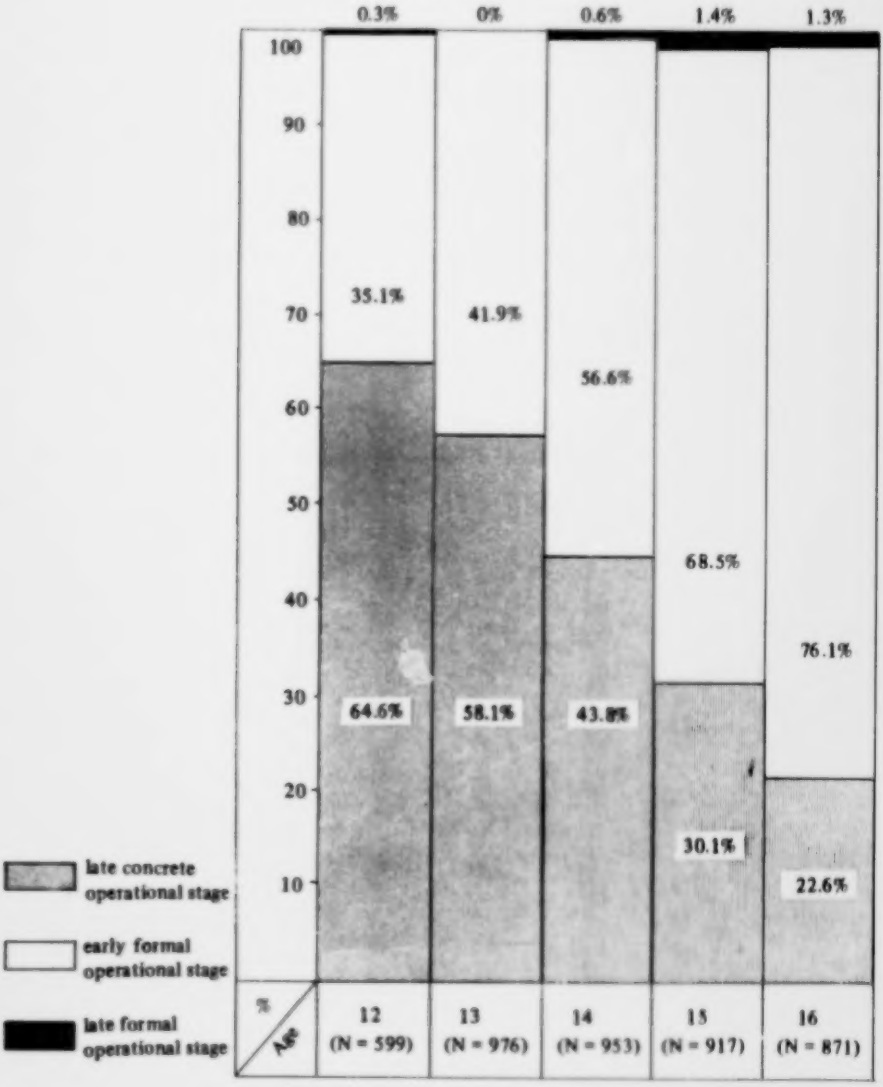

Table IV-7. Proportions of students to the Cognitive Development Stage by Grade

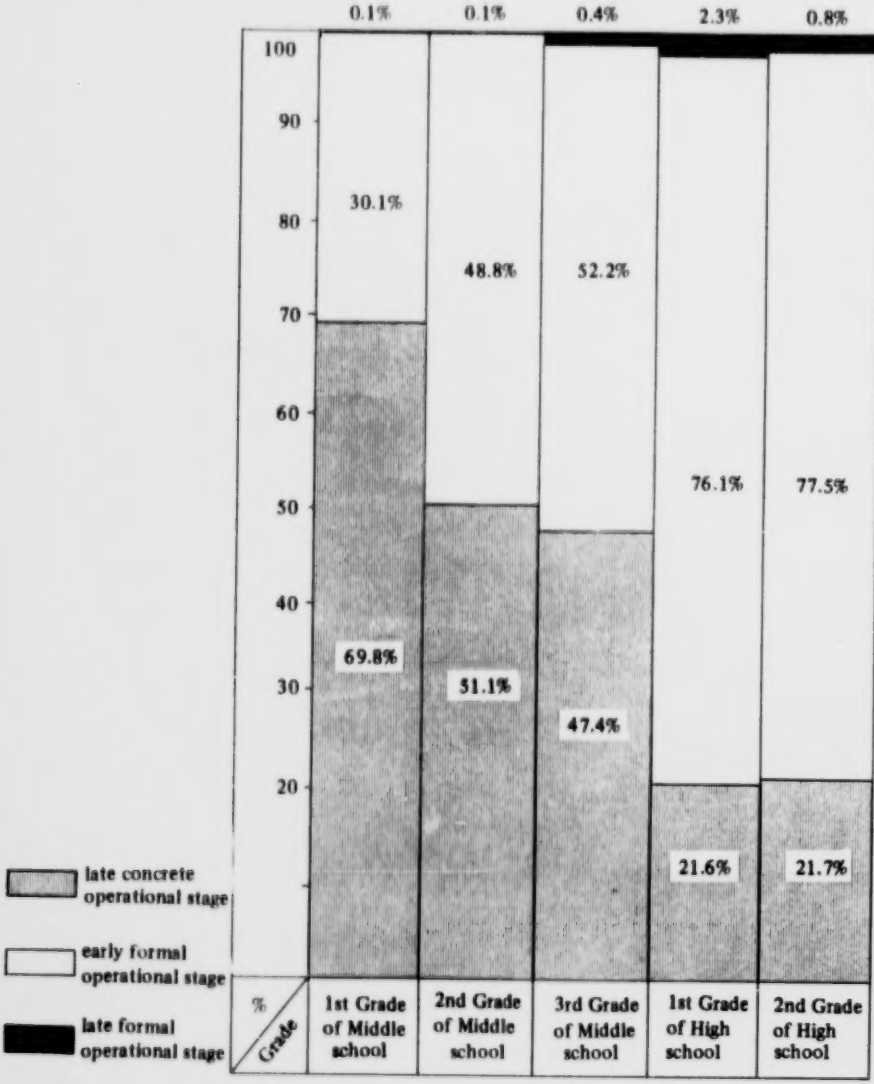

Table IV-8. Propertions of Students to the Cognitive Development Stage by Grade and Region

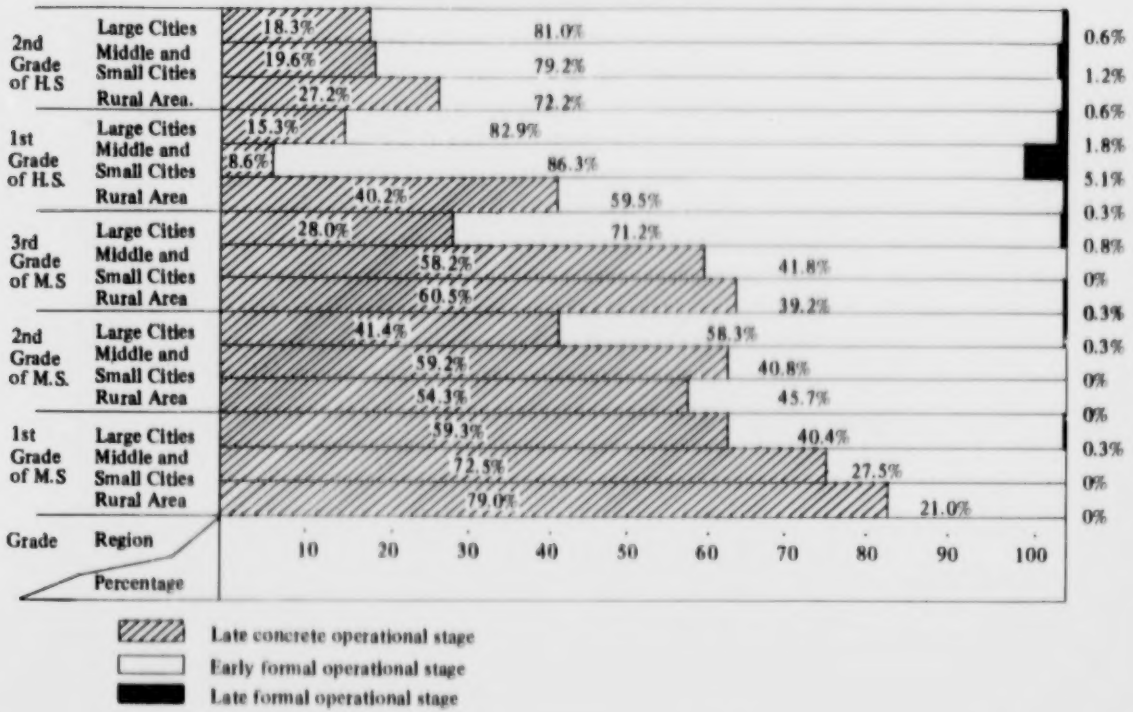

Table IV-9. Proportions of Students to the Cognitive Development Stage by Age and Region

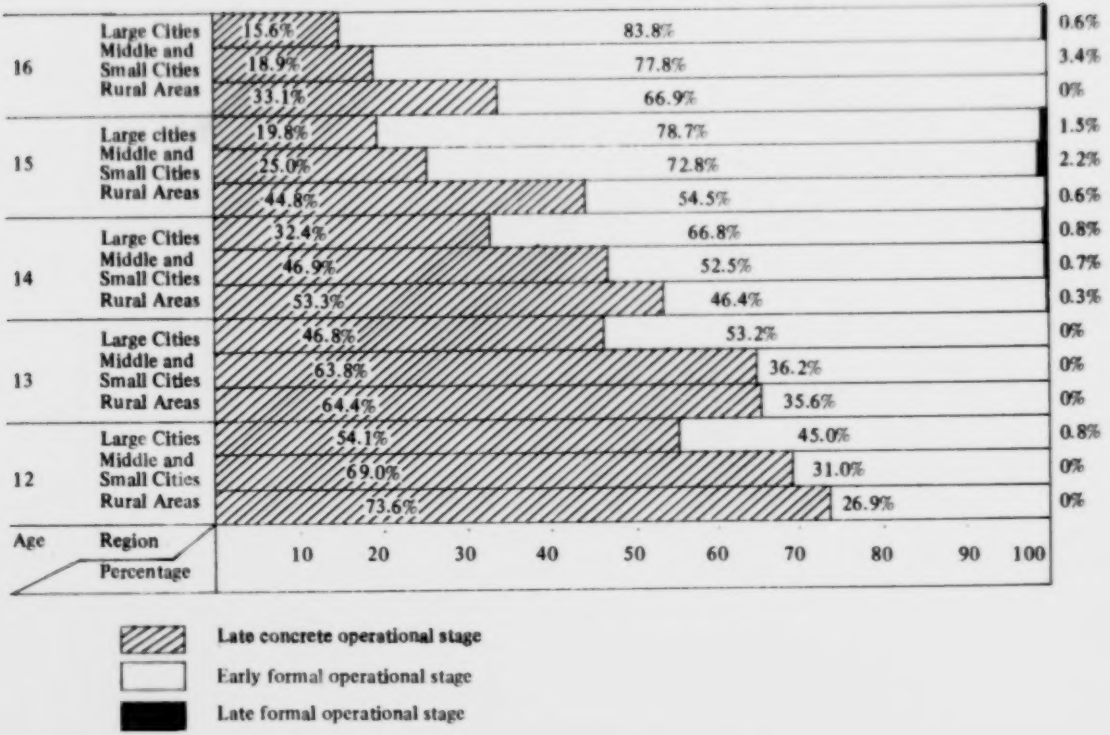

Table IV-10. Contents and Emotions from Middle School Students' Diaries

Content (theme) \ Emotion	Worry trouble	Despair frustration	Loneliness melancholy	Displeasure anger	Self-condemnation regret	Pleasure delight	Love for family & relatives	Love for the opposite sex	Amicability	Curiosity	Hope supplication	Pride dignity	Resolution	Other emotion	Total
Health and physical condition	7 (0.5)	2 (0.1)	2 (0.1)	2 (0.1)	2 (0.1)	2 (0.1)			1 (0.1)		5 (0.4)	4 (0.3)	2 (0.1)	5 (0.4)	34 (2.5)
Relations with friends	7 (0.5)	5 (0.4)	4 (0.3)	20 (1.5)	8 (0.6)	14 (1.0)		1 (0.1)	26 (1.9)	1 (0.1)	4 (0.3)	4 (0.3)	8 (0.6)	19 (1.4)	121 (8.8)
Relations with family and relatives	17 (1.2)	8 (0.6)	12 (0.9)	16 (1.2)	17 (1.1)	26 (1.9)	26 (1.9)	1 (0.1)	3 (0.2)	2 (0.1)	12 (0.9)	8 (0.6)	23 (1.7)	32 (2.3)	201 (14.6)
Group activity	2 (0.1)	2 (0.1)	1 (0.1)	1 (0.1)	2 (0.1)	8 (0.6)			12 (0.9)	1 (0.1)	2 (0.1)	6 (0.4)	4 (0.3)	3 (0.2)	44 (3.2)
Formation of personality	3 (0.2)		2 (0.1)		2 (0.1)	2 (0.1)	1 (0.1)				6 (0.4)	3 (0.2)	5 (0.4)	7 (0.5)	31 (2.3)
The opposite sex and sex			1 (0.1)		1 (0.1)			12 (0.9)	1 (0.1)	4 (0.3)		1 (0.1)		3 (0.2)	23 (1.7)
Study problems	49 (3.6)	8 (0.6)	1 (0.1)	5 (0.4)	33 (2.4)	12 (0.9)	1 (0.1)	2 (0.1)	4 (0.3)	3 (0.2)	23 (1.7)	15 (1.1)	102 (7.4)	16 (1.2)	274 (19.9)
School life	26 (1.9)	31 (2.3)	5 (0.3)	40 (2.9)	30 (2.2)	47 (3.4)	10 (0.7)		23 (1.7)	11 (0.8)	30 (2.2)	19 (1.4)	62 (4.5)	46 (3.3)	378 (25.3)
Hobbies and leisure	1 (0.1)	5 (0.4)	3 (0.2)	3 (0.2)	2 (0.1)	27 (2.0)	2 (0.1)		6 (0.4)	11 (0.8)	6 (0.4)	3 (0.2)	8 (0.6)	12 (0.9)	90 (6.5)
Values	3 (0.2)	5 (0.3)	4 (0.3)	3 (0.2)	8 (0.4)	2 (0.1)	1 (0.1)		2 (0.1)	6 (0.4)	7 (0.5)	5 (0.4)	23 (1.7)	21 (1.5)	86 (6.3)
Social concepts		3 (0.2)		5 (0.4)		4 (0.3)			4 (0.3)	2 (0.1)	7 (0.5)	3 (0.2)	8 (0.6)	7 (0.5)	43 (3.1)
Other	4 (0.3)	1 (0.1)	2 (0.1)	1 (0.1)	4 (0.3)	6 (0.4)	3 (0.2)		4 (0.3)	2 (0.1)	5 (0.4)	3 (0.2)	4 (0.3)	11 (0.8)	50 (3.6)
Total	130 (8.7)	68 (4.9)	31 (2.3)	96 (7.0)	105 (7.6)	150 (10.9)	44 (3.2)	16 (1.2)	86 (6.3)	43 (3.1)	107 (7.8)	74 (5.4)	249 (18.1)	182 (13.2)	1,375 (100)

* The number in parentheses is percentage

Table IV-11. Contents and Emotions from High School Students' Diaries

Content (theme) \ Emotion	Worry trouble	Despair frustration	Loneliness melancholy	Displeasure anger	Self-condemnation regret	Pleasure delight	Love for family relatives	Love for the opposite sex	Amicability	Curiosity	Hope supplication	Pride dignity	Resolution	Other emotion	Total
Health and physical condition	3 (0.5)			2 (0.4)		1 (0.2)				1 (0.2)			4 (0.7)	4 (0.7)	15 (2.7)
Relations with friends	4 (0.7)	3 (0.5)	1 (0.2)	5 (0.9)	7 (1.3)	4 (0.7)		1 (0.2)	16 (2.9)		4 (0.7)	2 (0.4)	3 (0.5)	4 (0.7)	54 (9.9)
Relations with family and relatives	4 (0.7)	5 (0.9)	2 (0.4)	1 (0.2)	6 (1.1)	8 (1.5)	11 (2.0)	1 (0.2)			4 (0.7)	3 (0.5)	9 (1.6)	9 (1.6)	63 (11.5)
Group activity	1 (0.2)		1 (0.2)	1 (0.2)	1 (0.2)	8 (1.5)		1 (0.2)	3 (0.5)	1 (0.2)			1 (0.2)	1 (0.2)	19 (3.5)
Formation of personality		2 (0.4)	4 (0.7)	3 (0.5)	2 (0.4)			1 (0.2)		1 (0.2)	1 (0.2)	2 (0.4)	5 (0.9)	3 (0.5)	24 (4.4)
The opposite sex and sex	2 (0.4)	1 (0.2)	4 (0.7)	1 (0.2)		1 (0.2)		13 (2.4)	1 (0.2)	2 (0.4)	1 (0.2)		4 (0.7)	6 (1.1)	36 (6.6)
Study problems	21 (3.8)	3 (0.5)	3 (0.5)	2 (0.4)	14 (2.6)	1 (0.2)	1 (0.2)	1 (0.2)	5 (2.9)	3 (0.5)	5 (0.9)	3 (0.5)	29 (5.3)	4 (0.7)	95 (17.4)
School life	5 (0.9)	4 (0.7)	4 (0.7)	5 (0.9)	10 (1.8)	7 (1.3)	2 (0.4)	1 (0.2)	6 (1.1)	3 (0.5)	11 (2.0)	5 (0.9)	32 (5.9)	15 (2.7)	110 (20.1)
Hobbies and leisure			1 (0.2)			7 (1.3)		1 (0.2)	1 (0.2)		1 (0.2)		3 (0.5)	8 (1.5)	22 (4.0)
Values	6 (1.1)	2 (0.4)	5 (0.9)	2 (0.4)	8 (1.5)		1 (0.2)		2 (0.4)	4 (0.7)	3 (0.5)	4 (0.7)	14 (2.6)	6 (1.1)	57 (10.4)
Social concepts		2 (0.4)		5 (0.9)	1 (0.2)				4 (0.7)	2 (0.4)	1 (0.2)	3 (0.5)	4 (0.5)	5 (0.9)	27 (4.9)
Other	3 (0.5)	1 (0.2)			1 (0.2)	3 (0.5)		1 (0.2)	2 (0.4)	1 (0.2)	3 (0.5)		7 (1.3)	2 (0.4)	24 (4.4)
Total	49 (9.0)	23 (4.2)	25 (4.6)	27 (4.9)	50 (9.2)	40 (7.3)	15 (2.7)	21 (3.8)	40 (7.3)	18 (3.3)	34 (6.2)	22 (4.0)	115 (21.1)	67 (12.3)	546 (100)

* The number in parentheses is percentage

Table IV-12. Emotions of Middle and High School Students' Diaries by Grade

Grade / Contents / Rank	1st year of middle school N=481		2nd year of middle school N=452		3rd year of middle school N=442		1st year of high school N=304		2nd year of high school N=242	
	Contents	% (frequency)	Contents	% (frequency)	Contents	% (frequency)	Contents	% (frequency)	Contents	% (frequency)
1st	Resolution (Will)	18.9 (91)	Resolution (Will)	16.6 (75)	Resolution (Will)	18.8 (83)	Resolution (Will)	23.4 (71)	Resolution (Will)	18.2 (44)
2nd	Pleasure Delight Exulation	10.8 (52)	Pleasure delight Exuitation	12.4 (56)	Worry trouble Anxiety	10.2 (45)	Worry trouble Anxiety (frelfulness)	10.2 (31)	Self-condemnation Regret, pain	0.1 (22)
3rd	Hope supplication Yearing	9.6 (46)	Displeasure anger Rage	7.5 (34)	Pleasure delight Exultation	8.4 (37)	Self-condemnation Regret	9.2 (28)	Pleasure delight Exultation	8.3 (20)
4th	Worry trouble Anxiety	8.7 (42)	Self-condemnation Regret	7.5 (34)	Self-condemnation Regret	7.7 (34)	Amicability comradery	8.6 (26)	Hope supplication Yearning	7.9 (19)
5th	Self-condemnation Regret	7.5 (36)	Hope supplication Yearning	6.0 (27)	Hope supplication Yearning	7.7 (34)	Pleasure delight Exultation	7.9 (24)	Worry trouble trouble Anxiety	7.4 (18)

Table IV-13. Emotions of Middle and High School Students' Diaries by Sex

School / Sex / Contents / Rank	Middle school				High school			
	Male N = 464		Female N = 911		Male N = 289		Female N = 257	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Resolution (Will)	21.8 (101)	Resolution (Will)	16.2 (148)	Resolution (Will)	26.0 (75)	Resolution (Will)	15.6 (40)
2nd	Pleasure delight Exultation	12.9 (60)	Pleasure delight Exultation	9.9 (90)	Self-condemnation	10.4	Worry trouble Anxiety	9.7 (25)
3rd	Worry trouble Anxiety	8.4 (39)	Worry trouble Anxiety	8.9 (81)	Worry trouble Anxiety	8.3 (24)	Pleasure delight Exultation	8.6 (22)
4th	Self-condemnation Regret, pain	7.8 (36)	Hope supplication Yearning	7.9 (72)	Amicability Comradery	8.0 (23)	Hope supplication Yearning	8.2 (21)
5th	Hope supplication Yearning	7.5 (35)	Self-condemnation Regret	7.6 (69)	Pleasure delight Exultation	6.2 (18)	Self-condemnation Regret	7.8 (20)

Table IV-14. Comparison of Students' Main Daily Weekday Routines by Grade

Grade / Contents / Rank	Total middle school students N = 3,146		Total high school students N = 1,968		1st year of middle school N = 1,020		2nd year of middle school N = 1,067		3 1 year of middle school N = 1,059		1st year of high school N = 1,001		2nd year of high school N = 967	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Review and preview	26.7 (889)	Review and preview	27.1 (533)	Review and preview	35.9 (366)	Review and preview	23.1 (246)	House work	21.8 (231)	Review and preview	28.3 (283)	Review and preview	25.9 (250)
2nd	House work	20.8 (655)	Watching TV or reading newspapers	16.2 (319)	House work	18.9 (193)	House work	21.6 (231)	Review and preview	21.4 (227)	Watching TV or reading newspapers	17.5 (175)	Watching TV or reading newspapers	16.3 (158)
3rd	Watching T V or reading newspapers	18.6 (585)	Listening to music and radio	14.0 (276)	Watching TV or reading newspapers	14.1 (144)	Watching TV or reading newspapers	20.9 (223)	Watching TV or reading newspapers	20.6 (218)	House work	14.1	Listening to music and radio	15.5 (150)
4th	Spending time with family	6.7 (210)	House work	11.9 (234)	Spending time with family	6.5 (66)	Sports	6.8 (73)	Listening to music and radio	7.5 (79)	Listening to music and radio	12.6 (126)	Housework	9.6 (93)
5th	Sports	5.6 (175)	Resting or napping	5.6 (110)	Sports	4.6 (47)	Spending time with family	6.5 (69)	Spending time with family	7.1 (75)	Spending with family	5.6 (56)	Talking with friends	6.5 (63)

Table IV-15. Comparison of Main Daily Weekday Routines by Sex

School / Sex / Contents / Rank	Middle school				High school			
	Male N = 1,555		Female N = 1,591		Male N = 990		Female N = 978	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Review and preview	28.0 (435)	House work	29.3 (466)	Review and preview	35.5 (351)	Review and preview	18.6 (182)
2nd	Watching T.V or reading newspapers	21.4 (332)	Review and preview	25.4 (404)	Watching TV and reading newspapers	16.4 (162)	House work	17.3 (169)
3rd	House work	12.2 (189)	Watching TV and reading newspapers	15.9 (253)	Listening to music and radio	12.6 (125)	Watching TV and reading newspapers	16.1 (157)
4th	Sports	10.5 (164)	Spending time with family	7.5 (120)	House work	6.6 (65)	Listening to music and radio	15.4 (151)
5th	Spending time with family	5.8 (90)	Listening to music and radio	5.4 (86)	Sports	6.2 (6.1)	Spending time with family	7.5 (73)

Table IV-16. Comparison of main daily holiday routines by school year

Grade / Contents / Rank	Total mid. school students N = 3,157		Total high school students N = 1,973		1st yr of mid. school N = 1,023		2rd yr of mid. school N = 1,070		3rd yr of mid. school N = 1,064		1st yr of high school N = 1,008		2nd yr of high school N = 965	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Housework	18.1 (570)	Housework	6.2 (320)	Housework	18.1 (185)	Housework	18.4 (197)	Watching T.V or reading newspapers	18.7 (199)	Housework	16.4 (165)	Religious activity (Church, temple)	17.0 (164)
2nd	Watching TV or reading news-papers	17.6 (556)	Watching TV or reading news-papers	19.7 (309)	Watching TV or reading news-papers	17.2 (176)	Watching TV or reading news-papers	16.9 (181)	Housework	17.7 (188)	Watching TV or reading news-papers	16.0 (161)	Housework	16.1 (155)
3rd	Review and preview	11. (346)	Religious activity (Church, temple)	15.2 (299)	Review and preview	14.9 (152)	Sports	12.0 (128)	Sports	9.7 (103)	Religious activity (Church, temple)	13.4 (135)	Watching TV or reading news-papers	15.3 (148)
4th	Sports	9.7 (307)	Sports	7.8 (154)	Spending time with family	8.0 (82)	Review and preview	9.2 (98)	Religious activity (Church, temple)	9.3 (99)	Review and preview	9.5 (96)	Sports	0.9 (76)
5th	Religious activity (Church, temple)	8.1 (255)	Review and preview	7.6 (149)	Religious activity (Church, temple)	7.5 (77)	Religious activity (Church, temple)	7.4 (79)	Review and preview	9.0 (96)	Sports	7.7 (78)	Spending time with friends	6.2 (60)

Table IV-17. Comparison of Main Daily Holiday Routines by Sex.

School	Middle school				High school			
Sex	Male N = 1,559		Female N = 1,598		Male N = 994		Female N = 979	
Contents / Rank	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Sports	17.8 (277)	Housework	22.4 (358)	Watching TV or reading newspapers	15.4	Housework	19.0 (186)
2nd	Watching TV or reading newspapers	21.4 (273)	Watching TV or reading newspapers	17.7 (283)	Sports	14.4 (143)	Religious activity	18.2 (178)
3rd	Housework	13.6 (212)	Review and preview	12.6 (202)	Housework	13.5	Watching TV or reading newspapers	15.9 (156)
4th	Review and preview	9.2 (144)	Religious activity (church, temple)	9.6 (153)	Religious activity	12.2 (121)	Spending time with family	8.1 (79)
5th	Religious activity (church, temple)	6.5 (102)	Spending time with family	7.9 (126)	Review and preview	8.1 (81)	Review and preview	6.9 (68)

Table IV-18. Comparison of Problems of Greatest Concern by Grade

Rank	Total middle school students N = 3,161		Total high school students N = 1,975		1st yr of middle school N = 1,031		2nd yr of middle school N = 1,071		3rd yr of middle school N = 1,059		1st yr of high school N = 1,008		2nd yr of high school N = 967	
	Concern	% frequency	Concern	% frequency	Concern	% frequency	Concern	% frequency	Concern	% frequency	Concern	% frequency	Concern	% frequency
1st	Study	38.1 (848)	Study	39.0 (771)	Study	34.6 (331)	Study	37.3 (292)	Study	32.3 (343)	Study	39.0 (393)	Study	39.0 (37.8)
2nd	Physical condition and health	30.2 (640)	Future direction and choice of occupation	10.8 (214)	Physical condition and health	34.4 (349)	Physical condition and health	26.0 (214)	Physical condition and health	16.6 (177)	Future direction and choice of occupation	10.4 (105)	Future direction and choice of occupation	11.3 (109)
3rd	Friends and friendship	9.8 (311)	Friends and friendship	8.5 (168)	Friends and friendship	11.3 (115)	Friends and friendship	10.9 (117)	Future direction and choice of occupation	10.6 (113)	Physical condition and health	7.8 (79)	Friends and friendship	9.5 (92)
4th	External appearance, feature and clothes	8.4 (266)	Physical condition and health	7.9 (156)	External appearance, feature and and clothes	7.9 (81)	External appearance, feature and and clothes	10.1 (108)	Friends and friendship	7.4 (79)	Their own personality and identity	7.7 (78)	Physical condition and health	7.9 (77)
5th	Family and domestic circumstances	6.2 (197)	Their own personality, and identity	7.3 (143)	Family and domestic circumstances	7.9 (80)	Hobbies and leisure time	7.7 (83)	External appearance, feature and clothes	7.2 (77)	Friends and friendship	7.5 (76)	Their own personality and identity	6.9 (67)

Table IV-19. Comparison of the Tendency for Problems of Greatest Concern by Sex

School / Sex / Contents / Rank	Middle school				High school			
	Male N = 1,561		Female N = 1,600		Male N = 996		Female N = 979	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Study	25.9 (404)	Study	30.3 (484)	Study	34.7 (346)	Study	43.4 (425)
2nd	Physical condition and health	23.4 (365)	Physical condition and health	17.2 (275)	Future direction and choice of occupation	10.7 (107)	Future direction and choice of occuptation	10.9 (107)
3rd	Hobbies and leisure time	8.1 (126)	External appearance, features and and clothes	12.6 (202)	Physical condition and health	10.2 (102)	Friends and friendship	8.4 (82)
4th	Friends and friendship	7.6 (119)	Friends and friendship	12.0 (192)	Friends and friendship	8.6 (86)	Their own personality and identity	7.5 (74)
5th	Future direction and choice of occupation	7.2 (112)	Family and domestic circumstances	6.4 (102)	The opposite sex friends and problems	7.9 (79)	External appearance, features and clothes identity	7.0 (69)

Table IV-20. Middle School Students' Problems that most urgently Need to be Solved

School Year / Contents / Rank	Total N = 2,990		Male N = 1,465		Female N = 1,525	
	Contents	% Frequency	Contents	% Frequency	Contents	% Frequency
1st	I want good grades	33.2 (994)	I want good grades	26.6 (390)	I want good grades	39.6 (604)
2nd	I need a sincere friend	16.6 (497)	I need a sincere friend	12.6 (185)	I need a sincere friend	20.5 (312)
3rd	I hope I'll be more clever	12.9 (387)	I want to know how to operate machinery	9.7 (142)	I hope I'll be more clever	17.4 (266)
4th	I want to know my aptitude	10.1 (301)	I want to be better at sports	8.3 (122)	I want to know about my aptitude	12.1 (185)
5th	I need my own room	7.4 (220)	I hope I'll be more clever	8.3 (121)	I need my own room	7.9 (120)

Table IV-21. High School Students Problems that Most Urgently Need to be Solved

School Year / Contents / Rank	Total N = 1,884		Male N = 941		Female N = 943	
	Contents	% Frequency	Contents	% Frequency	Contents	% Frequency
1st	I want to know how to study better	31.0 (584)	I want to know how to study better	25.5 (240)	I want to know how to study better	36.5 (344)
2nd	I want information about colleges and university	9.4 (177)	I want to be better at mathematics	9.4 (88)	I want information about colleges and university	10.4 (98)
3rd	I want to be better at mathematics	9.0 (169)	Should I go to college?	8.7 (82)	Should I go to college?	9.1 (86)
4th	Should I go to college?	8.9 (168)	I want to know about kinds of colleges and universities closely	8.4 (79)	I want to be better at mathematics	8.6 (81)
5th	I want to have more friends	7.1 (133)	What is a suitable job for me?	8.1 (76)	I have so much to do	8.0 (75)

Table IV-22. Comparison of Desired Emphases in Educational Curriculum by Grade

Grade / Comments / Rank	Total mid. school students N = 3,143		Total high school students N = 1,974		1st yr of mid. school N = 1,011		2nd yr of mid school N = 1,086		3rd yr of mid. school N = 1,063		1st yr of high school N = 1,005		2nd yr of high school N = 969	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Study problem	16.6 (522)	Away of life, philosophy	17.7 (349)	Study problem	19.6 (199)	Study problem	16.9 (170)	Study problem	14.6 (155)	Away of life philosophy (values)	17.0 (171)	Away of life philosophy (values)	18.4 (178)
2nd	Physical condition and health	9.3 (298)	Future direction and choice of occupation	13.8 (283)	Physical condition and health	9.7 (98)	Physical condition and health	11.3 (123)	The opposite sex friend and sexual problem	10.7 (114)	Hobbies and leisure time	12.3 (126)	Future direction and choice of occupation	16.4 (159)
3rd	Group (circle) activity	9.3 (292)	Study problem	11.1 (219)	School life	9.3 (94)	Group (circle) activity	10.9 (116)	Away of life philosophy (values)	9.3 (99)	Study problem	12.4 (125)	The opposite sex friend and sexual problem	10.3 (100)
4th	School life	8.8 (278)	Hobbies and leisure time	10.7 (211)	Hobbies and leisure time	8.6 (87)	Hobbies and leisure time	9.6 (102)	School life	8.9 (95)	Away of life and choice of occupation	11.3 (114)	Study problem	9.7 (94)
5th	Hobbies and leisure time	8.7 (275)	The opposite sex friend and sexual problem	10.3 (207)	Group (circle) activity	8.3 (84)	School life	8.3 (89)	Group (circle) activity	8.7 (92)	The opposite sex friend and sexual problem	10.6 (107)	Hobbies and leisure time	8.8 (85)

Table IV-23 Comparison of Desired Emphases in Educational Curriculum by Sex

School / Sex / Contents / Rank	Middle school			N = 3,143	High school			N = 1,974
	Male	N = 1,548	Female	N = 1,595	Male	N = 994	Female	N = 980
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Study problem	19.9 (246)	Study problem	17.3 (276)	Away of life philosophy (values)	18.8 (187)	Away of life philosophy (values)	16.5 (162)
2nd	Hobbies and leisure time	9.2 (142)	Group (circle) activity	11.1 (177)	Future direction and choice of occupation	13.3 (132)	Future direction and choice of occupation	14.4 (141)
3rd	Physical condition and health	9.0 (140)	Physical condition and health	9.9 (158)	The opposite sex friend and sexual problem	11.8 (117)	Study problem	12.3 (121)
4th	School life (extra-curricular activity adaptation for school life)	8.9 (138)	School life (extra-curricular activity adaptation for school life)	8.8 (140)	Study problem	9.9 (98)	Hobbies and leisure time	11.9 (117)
5th	friends and amicability	8.3 (128)	Hobbies and leisure time	8.3 (133)	Hobbies and leisure time	9.5 (94)	School life (extra-curricular activity adaptation for school life)	9.6 (94)

Table IV-24. Dissatisfactions of School Life by Grade

Grade / Contents / Rank	Total middle school students N = 3,150		Total high school students N = 1,966		1st yr of middle school N = 1,019		2nd yr of middle school N = 1,086		3rd yr of middle school N = 1,063		1st yr of high school N = 1,003		2nd yr of high school N = 963	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Facilities equipment and furnishings	20.3 (640)	Facilities, equipment and furnishings	17.6 (346)	Facilities, equipment and furnishings	19.5 (199)	Facilities equipment and furnishings	2.2 (2)	Facilities equipment and furnishings	20.2 (215)	Facilities equipment and furnishings	19.5 (196)	Audio-visual and supplementary material	16.8 (162)
2nd	Audio-visual and supplementary material	12.3 (387)	Audio-visual and supplementary material	14.3 (281)	Junior senior relations	12.4 (126)	Audio-visual and supplementary material	11.3 (120)	Audio-visual and supplementary material	17.8 (190)	Audio-visual and supplementary material	11.9 (119)	Facilities equipment and furnishing	15.6 (150)
3rd	Junior-senior relations	8.7 (274)	Text book contents	9.9 (194)	Classmates	11.8 (120)	Junior-senior relations	9.4 (100)	Teacher's guidance	6.9 (74)	Textbook contents	10.2 (103)	Text book contents	9.6 (92)
4th	Classmates	8.3 (263)	Extra-curricular and group activity	7.1 (140)	Playground and atheletic equipment	7.8 (79)	Classmates	7.7 (82)	Library facilities and the amount of books	6.5 (69)	Extra-curricular and group activity	8.0 (80)	Rules and regulations	8.4 (81)
5th	Playground and atheletic equipment	6.3 (197)	Rules and regulations	6.3 (124)	Audio-visual and supplementary material	7.6 (77)	Library facilities and the amount of books	6.5 (69)	Playground and atheletic equipment	5.8 (62)	Junior-senior relations	5.3 (53)	Extra-curricular and group activity teacher's guidance	6.2 (60)

Table IV-25. Dissatifactions of School Life by Sex

School / Sex / Contents / Rank	Middle school N = 3,510				High school N = 1,966			
	Male N = 1,557		Female N = 1,593		Male N = 988		Female N = 978	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Facilities, equipment and furnishings	16.8 (262)	Facilities, equipment and furnishings	23.7 (378)	Audio-visual and supplementary material	17.0 (168)	Facilities, equipment and furnishings	23.8 (233)
2nd	Junior-senior relations	13.0 (202)	Audio-visual and supplementary material	11.9 (189)	Facilities, equipment and furnishings	11.4 (113)	Audio-visual and supplementary meterial	11.6 (113)
3rd	Audio-visual and supplementary meterial	12.7 (189)	Classmates	8.7 (139)	Textbook contents	8.5 (84)	Textbook contents	11.2 (110)
4th	Classmates	8.0 (124)	Library facilities and the amount of books	6.1 (97)	Extra-curricular and group activity	7.8 (77)	Classmates	6.5 (64)
5th	Playground and atheletic equipment	7.0 (109)	Rules and regulations	5.8 (93)	Junior-senior relations	7.3 (72)	Extra-curricular and group activity	6.4 (63)

Table IV-26. Comparison of Students' Favored Activities by Grade

Grade / Content / Rank	Total middle school students N = 941		Tochi high school students N = 56		1st yr of middle school N = 286		2nd yr of middle school N = 327		3rd yr of middle school N = 328		1st yr of high school N = 333		2nd yr of high school N = 323	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Hobbies and leisure time 1. (12.8) 2. (66.3) 3. (8.4)	40.7 (383)	Hobbies and leisure time 1. (15.8) 2. (72.7) 3. (5.5)	38.6 (253)	Hobbies and leisure time 1. (1.0) 2. (81.9) 3. (5.0)	35.3 (101)	Hobbies and leisure time 1. (16.1) 2. (63.8) 3. (7.4)	45.4 (149)	Hobbies and leisure time 1. (18.0) 2. (57.9) 3. (12.0)	40.5 (133)	Hobbies and leisure time 1. (13.8) 2. (75.2) 3. (6.2)	43.5 (145)	Hobbies and leisure time 1. (18.3) 2. (68.8) 3. (4.6)	33.7 (109)
2nd	Housework 1. (49.3) 2. (49.3)	16.2 (152)	Social Activity 1. (2.4) 2. (32.9) 3. (63.4)	12.5 (82)	Housework 1. (52.3) 2. (46.2)	22.7 (65)	Housework 1. (50.0) 2. (50.0)	15.2 (50)	Social activity 1. (5.6) 2. (33.3) 3. (57.4)	16.5 (54)	Housework 1. (56.8) 2. (40.9)	13.2 (44)	Social activity 1. (2.0) 2. (27.5) 3. (68.6)	15.8 (51)
3rd	Social activity 1. (10.1) 2. (30.9) 3. (54.0)	14.8 (139)	Housework 1. (31.9) 2. (45.5)	11.7 (77)	Learning activities 1. Studying (53.6) 2. Buying school supplies and reference books (8.3)	12.6 (36)	Social activity 1. (8.2) 2. (22.4) 3. (63.3)	14.9 (49)	Housework 1. (43.2) 2. (54.1)	11.3 (37)	Social activity 1. (3.2) 2. (41.9) 3. (54.8)	9.3 (31)	Learning activity 1. (76.5) 2. (5.9)	10.5 (34)
4th	Learning activity 1. (56.0) 2. (7.1)	8.9 (84)	Learning activity 1. (76.4) 2. (5.5)	8.4 (55)	Social activity 1. (19.4) 2. (38.9) 3. (36.1)	12.6 (36)	Learning activity 1. (47.6) 2. (14.3)	6.4 (27)	Learning activity 1. (63.0) 2. (0.0)	8.3	Learning activity 1. (76.2) 2. (4.8)	6.3 (21)	Housework 1. (45.5) 2. (51.5)	10.2 (33)
5th	Resting, napping and health	5.2 (49)	Spending time with friends	5.8 (38)	Resting, napping and health	4.5 (13)	Resting, napping and health	3.7 (12)	Resting, napping and health	7.3 (24)	Spending time with friends	3.9 (13)	Spending time with friends	7.7 (25)

* Actual activities

A. Reading
1. Reading 2. Travel, sports, hobbies 3. Eating, drinking, and enjoying oneself

B. Housework
1. Helping with house work 2. Spending time with family and relatives

C. Social activity
1. Saving money 2. Helping other people. 3 Broadening social experience

D. Learning activities
1. Studying 2. Buying school supplies and reference books

Table IV-27. Comparison of Students' Favored Activities by Sex

School / Sex / Contents / Rank	Middle school			N = 941	High school			N = 656
	Male	N = 479	Female	N = 462	Male	N = 293	Female	N = 363
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Hobbies and leisure time 1. Reading (8.3) 2. Travel, sports, hobbies (78.5) 3. Eating, drinking and enjoying oneself (7.4)	50.5 (242)	Hobbies and leisure time 1. Reading (20.6) 2. Travel, sports, hobbies (45.4) 3. Eating, drinking and enjoying oneself (9.9)	30.5 (141)	Hobbies and leisure time 1. Reading (10.7) 2. Travel, sports hobbies (80.2) 3. Eating, drinking, and enjoying oneself (6.6)	41.3 (121)	Hobbies and leisure time 1. Reading (20.5) 2. Travel, sports, hobbies (65.9) 3. Eating, drinking and enjoying oneself (4.5)	36.4 (132)
2nd	Social activity 1. Saving money (10.3) 2. Helping other people (29.4) 3. Broading social experience (52.9)	14.2 (68)	Housework 1. Helping with housework (51.5) 2. Spending time with family and relatives (46.4)	21.0 (97)	Social activity 1. Saving money (4.1) 2. Helping other people (22.4) 3. Broading social experience (73.5)	16.7 (49)	House work 1. Helping with housework (52.8) 2. Spending time with family and relatives (45.3)	14.6 (53)
3rd	Housework 1. Helping with housework (45.5) 2. Spending time with family and relatives (54.5)	11.5 (55)	Social activity 1. Saving money (9.9) 2. Helping other people (32.4) 3. Broading social experience (54.9)	15.4 (71)	Learning activity 1. Studying (70.4) 2. Buying school supplies and reference books (7.4)	9.2 (27)	Social activity 1. Saving money (0.0) 2. Helping other people (38.5) 3. Broading social experience (48.5)	9.1 (33)
4th	Learning activity 1. Studying (65.2) 2. Buying school supplies and reference books (8.7)	9.6 (46)	Learning activity 1. Studying (44.7) 2. Buying school supplies and reference books (5.3)	8.2 (38)	Housework 1. Helping with housework (50.0) 2. Spending time with family and relatives (48.3)	9.2 (27)	Learning activity 1. Studying (82.1) 2. Buying school supplies and reference books (3.6)	7.7 (28)
5th	Resting, napping and health	5.4 (26)	Spending time with friends	5.6 (26)	A way of life philosophy, values	6.8 (20)	Spending time with friends	7.2 (26)

Table IV-28. Comparison of Students' Topics of Conversation by Grade

Grade / Contents / Rank	Total middle school students N = 877		Total high school students N = 778		1st yr of mid. school N = 297		2nd yr of mid. school N = 365		3rd yr of mid. school N = 315		1st yr of high school N = 390		2nd yr of high school N = 388	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Future direction and choice of occupation	19.8 (174)	The opposite sex and sexual knowledge	17.9 (139)	Future direction and choice of occupation	23.9 (68)	Hobbies and leisure time	19.1 (52)	Future direction and choice of occupation	18.4 (58)	The opposite sex and sexual knowledge	16.2 (63)	The opposite sex and choice of occupation	19.6 (76)
2nd	Hobbies and leisure time	16.3 (143)	Future direction and choice of occupation	15.2 (118)	Hobbies and leisure time	20.9 (62)	Future direction and choice of occupation	18.1 (48)	The opposite sex and sexual knowledge	16.8 (53)	Future direction and choice of occupation	16.2 (63)	Future direction and choice of occupation	14.2 (55)
3rd	School life	12.7 (111)	School life	10.7 (83)	Friends and amicability	13.1 (39)	A way of life values	13.8 (36)	School life	14.6 (46)	Hobbies and leisure time	12.6 (49)	School life friendship	11.6 (45)
4th	Friends and friendship	12.5 (110)	Friends and friendship	10.3 (80)	School life	10.4 (31)	Friends and friendship	11.3 (30)	Friends and friendship	13.0 (41)	School life	9.7 (38)	Friends and friendship	11.1 (43)
5th	The opposite sex and sexual knowledge	10.0 (88)	Hobbies and leisure time	19.8 (76)	Study problem	8.8	The opposite sex and sexual knowledge	9.1 (24)	Study problem	9.5 (30)	Values	9.5 (37)	Values	9.8 (38)
6th	Study problem	8.4 (74)	Values	9.6 (75)	Family and domestic surroundings	8.4 (25)	Study problems	6.8 (18)	Hobbies and leisure time	9.2 (29)	Friends and friendship	9.5 (35)	Study problem	7.5 (29)
7th	Family and domestic surroundings	7.5 (66)	Study problem	7.8 (61)	Family and personality	6.4 (15)	Family and domestic surroundings	7.6 (17)	Family and domestic surroundings	8.1 (24)	Study problem	8.3 (32)	Hobbies and leisure time	7.0 (27)
8th	Values	3.9 (34)	Social views	6.3 (49)	The opposite sex and sexual knowledge	3.7 (11)	Social views	4.9 (13)	Values	4.4 (14)	Social views	5.6 (22)	Social views	7.0 (27)

Table IV-29. Comparison of Students' Topics of Conversation by Sex

School / Sex / Contents / Rank	Middle school N = 877				High school N = 422			
	Male N = 422		Female N = 455		Male N = 356		Female N = 422	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Future direction and choice of occupation	21.6 (91)	Future direction and choice of occupation	18.2 (83)	Future direction and choice of occupation	17.7 (63)	The opposite sex and sexual knowledge	18.5 (78)
2nd	Hobbies and leisure time	16.4 (69)	Hobbies and leisure time	16.3 (74)	The opposite sex and sexual knowledge	17.1 (61)	Future direction and choice of occupation	13.0 (55)
3rd	School life	13.7 (5")	Friends and amicability	14.7 (67)	School life	10.4 (37)	Friends and amicability	12.3 (52)
4th	Friends and amicability	10.2 (43)	School life	11.6 (53)	Study problem	9.3 (33)	Hobbies and leisure time	11.6 (49)
5th	Study problem	9.7 (41)	The opposite sex and sexual knowledge	11.0 (50)	A way of life, values	9.3 (33)	School life	10.9 (46)
6th	The opposite sex and sexual knowledge	9.0 (38)	Family and domestic surroundings	8.6 (39)	Social views	8.4 (30)	A way of life values	10.0 (42)
7th	Family and domestic surroundings	6.5 (27)	Study problem	7.3 (33)	Friends and amicability	7.9 (28)	Study problem	6.6 (28)
8th	Social views	3.6 (15)	A way of life, values	4.4 (20)	Hobbies and leisure time	7.6 (27)	Family and domestic surroundings	5.2 (22)

Table IV-30. Comparison of Things that Students Want to Posses by Grade

Grade / Contents / Rank	Total mid school students N = 3,178		Total high school students N = 2,018		1st yr of mid school N = 994		2nd yr of mid school N = 1,085		3rd yr of mid school N = 1,099		1st yr of high school N = 1,013		2nd yr of high school N = 1,005	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Bicycle	14.9 (473)	Electronic Products	18.0 (363)	Bicycle	17.7 (176)	Bicycle	15.4 (167)	Electronic Products	16.2 (178)	Electronic Products	18.7 (189)	Electronic Products	17.3 (174)
2nd	Book	10.7 (347)	Book	12.7 (257)	Sports Equipment	13.1 (130)	Book	11.7 (127)	Book	12.0 (132)	Piano	13.2 (134)	Book	13.6 (137)
3rd	Sports Equipment	10.4 (332)	Piano	12.0 (243)	Piano	11.3 (112)	Sports Equipment	11.1 (120)	Bicycle	11.8 (130)	Book	11.8 (120)	Piano	10.8 (109)
4th	Electronic Products	9.8 (310)	Motorcycle	8.5 (172)	Book	8.9 (88)	Piano	9.1 (99)	Motorcycle	8.9 (98)	Motorcycle	8.3 (84)	Motorcycle	8.8 (88)
5th	Piano	8.8 (281)	Guitar Drum	5.5 (110)	Fountain-pen	6.1 (61)	Own room	9.3 (90)	Sports Equipment	7.5 (82)	Guitar Drum	5.6 (57)	Guitar Drum	5.3 (53)

Table IV-31. Comparison of Things that Students Want to Possess by Sex

School	Middle school			N = 3,178	High school			N = 2,018
Sex	Male	N = 1,604	Female	N = 1,574	Male	N = 993	Female	N = 1,025
Contents / Rank	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Bicycle	21.5 (342)	Piano	10.2 (271)	Electronic product	18.0 (179)	Piano	20.7 (212)
2nd	Sports Equipment	18.1 (289)	Book	15.6 (245)	Motorcycle	16.3 (162)	Electronic product	18.0 (184)
3rd	Motorcycle	10.5 (167)	Electronic product	11.7 (184)	Book	8.7 (86)	Book	16.7 (171)
4th	Electronic Product	7.3 (126)	Own room	11.2 (177)	Bicycle	7.5 (75)	Own room	7.6 (78)
5th	Book	6.4 (102)	Bicycle	8.3 (131)	Car	7.6 (75)	Camera	4.4 (45)

Table IV-32. Comparison of Goals which Students Wish to Obtain or Accomplish by Grade

Grade / Contents / Rank	Total middle school students N = 3,095		Total high school students N = 2,011		1st yr of mid school N = 1,011		2nd yr of middle school N = 1,062		3rd yr of mid school N = 1,022		1st yr of high school N = 1,026		2nd yr of high school N = 985	
	Contents	% fre-quency	Contents	% fre-quency	Contents	% fre-quency	Contents	% fre-quency	Contents	% fre-quency	Contents	% fre-quency	Contents	% fre-quency
1st	1. The job of their choice (95.2) 2. Nobel prize gold medal (4.8)	46.8 (1,448)	1. The job of their choice (96.2) 2. Nobel prize gold medal (3.8)	35.0 (703)	1. The job of their choice (94.4) 2. Nobel prize gold medal (5.6)	49.1 (496)	1. The job of their choice (96.2) 2. Nobel prize gold medal (3.8)	47.5 (504)	1. The job of their choice (49.9) 2. Nobel prize gold medal (5.1)	43.8 (448)	1. The job of their choice (95.9) 2. Nobel prize gold medal (4.1)	35.5 (364)	1. The job of their choice (96.5) 2. Nobel prize gold medal (3.5)	34.4 (339)
2nd	Improvement of grades Getting into college	20.1 (622)	Improvement of grades Getting into college	28.3 (569)	Improvement of grades Getting into college	15.3 (155)	Improvement of grades Getting into college	31.2 (233)	Improvement grades Getting into college	23.7 (242)	Improvement grades Getting into college	27.7 (284)	Improvement grades Getting into college	28.9 (285)
3rd	Hobbies and leisure time 1. World travel (34.1) 2. Space travel (22.3)	11.6 (358)	Hobbies and leisure time 2. World travel (57.8) 2. Space travel (8.6)	9.2 (185)	Hobbies and leisure time 1. World travel (21.9) 2. Space travel (25.7)	10.4 (105)	Hobbies and leisure time 1. World travel (27.7) 2. Space travel (18.1)	8.9 (94)	Hobbies and leisure time 1. World travel (43.9) 2. Space travel (22.6)	15.6 (159)	Hobbies and leisure time 1. World travel (61.3) 2. Space travel (12.3)	10.3 (106)	Hobbies and leisure time 1. World travel (53.2) 2. Space travel (3.8)	8.0 (79)
4th	Social views 1. Unification of North and South Korea (57.9) 2. Great society (42.2)	7.7 (228)	Improvement of personality	5.9 (119)	Social views 1. Unification of North and south Korea (68.0) 2. Great society (32.0)	10.2 (103)	Social views 1. Unification of North and south Korea (64.9) 2. Great society (36.1)	6.8 (72)	Social views 1. Unification of North and south Korea (30.2) 2. Great society (69.8)	5.2 (53)	A way of life	6.5 (67)	Improvement of personality	7.9 (78)
5th	Family harmony & health	3.5 (108)	Social views 1. Unification of North and south Korea (37.6) 2. Great society (62.4)	5.4 (109)	Family harmony & health	4.2 (42)	Family harmony & health	3.9 (41)	Completion of personality	2.6 (27)	Social views 1. Unification of North and south Korea (32.7) 2. Great society (67.3)	5.4 (55)	Social views 1. Unification of North and south Korea (42.6) 2. Great society (57.4)	5.5 (54)

Table IV-33. Comparison of Goals which Students Wish to Obtain or Accomplish by Sex

School / Sex / Contents / Rank	Middle School				High School			
	Male	N = 1,531	Female	N = 1,564	Male	N = 990	Female	N = 1,021
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	1. The job of their choice (92.1)	48.1	1. The job of their choice (98.3)	45.5	1. The job of their choice (94.2)	38.2	Improvement of grades	33.0
	2. Nobel prize, gold medal (7.9)	(736)	2. Nobel prize, gold medal (1.7)	(712)	2. Nobel prize, gold medal (5.8)	(378)	Getting into college	(337)
2nd	Improvement of grades	17.3	Improvement of grades	22.8	Improvement of grades	23.4	1. The job of their choice (98.5)	31.8
	Getting into college	(265)	Getting into college	(357)	Getting into college	(232)	2. Nobel prize, gold medal (1.5)	(325)
3rd	Hobbies and leisure time	13.3	Hobbies and leisure time	9.8	Hobbies and leisure time	8.6	Hobbies and leisure time	9.8
	1. World travel (19.6)	1	1. World travel (15.3)		1. World travel (45.9)		1. World travel (68.0)	
	2. Space travel (27.5)	(204)	2. Space travel (15.6)	(154)	2. Space travel (12.9)	(85)	2. Space travel (5.0)	(100)
4th	Social views		Social views		A way of life	6.5	Completion of personality	6.9
	1. Unification of North and South Korea	7.5	1. Unifcation of North and South Korea (54.9)	7.2				
	2. Great society (39.1)	(115)	2. Great society (45.1)	(113)		(64)		(70)
5th	Completion of personality	2.9 (44)	Family harmony and health	4.1 (64)	Social views		A way of life	4.1
					1. Unification of North and South Korea (47.9)	7.4		(42)
					2. Great society (52.1)	(73)		

Table-34. Types of Need According to TAT

( ): %

School / Sex / Needs	Total mid school students	Total high school students	Middle school		High school	
			Male	Female	Male	Female
Achievement	383 (34.8)	239 (32.3)	197 (36.0)	186 (33.5)	133 (35.8)	106 (28.8)
Acquisition	76 (6.9)	34 (4.6)	54 (9.9)	22 (4.0)	25 (6.7)	9 (2.4)
Counter-action	58 (5.3)	34 (4.6)	39 (7.1)	19 (3.4)	22 (5.9)	12 (3.3)
Sentinence	29 (2.6)	15 (2.0)	7 (1.3)	22 (4.0)	6 (1.6)	9 (2.4)
Understand-ing	19 (1.7)	20 (2.7)	10 (1.8)	9 (1.6)	9 (2.4)	11 (3.0)
Affiliation	167 (15.2)	131 (17.2)	72 (13.2)	95 (17.1)	52 (14.0)	79 (21.5)
Aggression	45 (4.1)	15 (2.0)	26 (4.8)	19 (3.4)	9 (2.4)	6 (1.6)
Nurturance	92 (8.4)	53 (7.2)	24 (4.4)	68 (12.3)	20 (5.4)	33 (9.0)
Recognition	18 (1.6)	14 (1.9)	6 (1.1)	12 (2.2)	6 (1.6)	8 (2.2)
Rejection	11 (1.0)	16 (2.2)	1 (0.2)	10 (1.8)	6 (1.6)	10 (2.7)
Succorance	29 (2.6)	32 (4.3)	10 (1.8)	19 (3.4)	13 (3.5)	19 (5.2)
Abasement	18 (1.6)	13 (1.8)	10 (1.8)	8 (1.4)	6 (1.6)	7 (1.9)
Autonomy	42 (3.8)	37 (5.0)	19 (3.5)	23 (4.2)	9 (2.4)	28 (7.6)
Blame-Avoi-dance	28 (2.5)	8 (1.1)	16 (2.9)	12 (2.2)	6 (1.6)	2 (0.5)
Deference	9 (0.8)	18 (2.4)	5 (0.9)	4 (0.7)	14 (3.8)	4 (1.1)
Other needs	77 (7.0)	60 (8.1)	52 (9.5)	25 (4.5)	34 (9.2)	26 (7.1)
Total	1,101 (100)	739 (100)	547 (100)	554 (100)	371 (100)	368 (100)

Table-35. Types of Press According to TAT

( ): %

School / Sex / Press	Total mid. school students	Total high school students	Middle school		High school	
			Male	Female	Male	Female
Affiliation	14 (1.6)	17 (2.6)	9 (2.2)	5 (1.1)	9 (2.7)	8 (2.5)
Aggression	21 (2.4)	18 (2.8)	8 (1.9)	13 (2.8)	10 (3.0)	8 (2.5)
Dominance	81 (9.2)	62 (9.5)	44 (10.6)	37 (8.0)	29 (8.7)	33 (10.4)
Example	38 (4.3)	16 (2.5)	9 (2.2)	29 (6.2)	5 (1.5)	11 (3.5)
Nurturance	31 (3.5)	29 (4.4)	9 (2.2)	22 (4.7)	14 (4.2)	15 (4.7)
Rejection	16 (1.8)	27 (4.1)	3 (0.7)	13 (2.8)	11 (3.3)	16 (5.0)
Succorance	21 (2.4)	21 (3.2)	4 (1.0)	17 (3.7)	11 (3.3)	10 (3.2)
Family Insupport	50 (5.7)	49 (7.5)	22 (5.3)	28 (6.0)	19 (5.7)	30 (9.5)
Dominance-Nuturance	38 (4.3)	44 (6.7)	12 (2.9)	26 (5.6)	18 (5.4)	26 (8.2)
Affliction	74 (8.4)	42 (6.4)	24 (5.8)	50 (10.8)	18 (5.4)	24 (7.6)
Lack	125 (1.42)	59 (9.0)	74 (17.8)	51 (11.0)	34 (10.1)	25 (7.9)
Variety	12 (1.4)	14 (2.1)	8 (1.9)	4 (0.9)	3 (0.9)	11 (3.5)
Frustration	95 (10.8)	57 (8.7)	60 (14.4)	35 (7.5)	22 (6.6)	35 (11.0)
Guilt	43 (4.9)	30 (4.6)	21 (5.0)	22 (4.7)	9 (2.7)	21 (6.6)
Social Power & Press	53 (6.0)	20 (3.1)	26 (6.3)	27 (5.8)	7 (2.1)	13 (4.1)
Other Press	169 (19.2)	147 (22.5)	83 (20.0)	86 (18.5)	116 (34.6)	31 (9.8)
Total	881 (100)	652 (100)	416 (100)	465 (100)	335 (100)	317 (100)

Table IV-36. Inner States as a result of TAT

( ) : %

School, Sex / Inner State	Total middle school students	Total high school students	Middle school		High school	
			Male	Female	Male	Female
Happiness	313 (29.5)	215 (29.8)	128 (24.2)	185 (34.8)	124 (34.1)	91 (25.5)
Conflict	674 (63.5)	424 (58.8)	376 (71.1)	298 (56.0)	202 (55.5)	222 (62.2)
Pessimism	74 (7.0)	82 (11.4)	25 (4.7)	49 (9.2)	38 (10.4)	44 (12.3)
Total	1,061 (100)	721 (100)	529 (100)	532 (100)	364 (100)	357 (100)

Table IV-37. Results of TAT

( ) : %

School, Sex / Result	Total middle school students	Total high school students	Middle school		High school	
			Male	Female	Male	Female
Happy	907 (86.0)	568 (74.8)	462 (88.2)	445 (83.8)	283 (78.2)	285 (71.8)
Unhappy	77 (7.3)	124 (16.3)	36 (6.9)	41 (7.7)	42 (11.6)	82 (20.7)
Unresolved	71 (6.7)	67 (8.8)	26 (5.0)	45 (8.5)	37 (10.2)	30 (7.6)
Total	1,055 (100)	759 (100)	524 (100	531 (100)	362 (100)	397 (100)

Table IV-38. Composition of Results of Needs Diagnostic Test by Grade

School / Grade / Classification / Needs		Middle school			High school		F	P
		1st yr	2nd yr	3rd yr	1st yr	2nd yr		
Abasement	M	11.8	12.2	12.4	12.6	12.6	5.2	0.000
	S	3.9	5.1	4.2	3.9	3.9		
Achievement	M	15.7	16.1	16.2	15.9	15.6	3.3	0.010
	S	4.6	5.1	4.4	4.5	4.7		
Affiliation	M	12.8	13.6	14.1	14.7	14.5	27.5	0.000
	S	4.2	4.6	3.9	4.2	3.8		
Aggression	M	7.8	8.3	7.2	6.9	6.8	15.2	0.000
	S	4.8	5.6	4.5	4.4	4.3		
Dominance	M	9.4	9.8	9.4	10.0	10.5	7.8	0.000
	S	5.0	5.7	5.0	5.2	5.4		
Emotionality	M	12.0	12.5	13.0	13.1	13.2	5.5	0.000
	S	5.0	5.2	4.7	4.6	4.7		
Exhibitionism	M	10.1	10.8	10.2	10.4	10.1	3.3	0.010
	S	5.3	6.0	5.2	5.4	5.5		
Sex	M	8.4	10.6	10.8	11.0	10.7	27.6	0.000
	S	5.9	6.4	5.7	5.3	4.9		
Autonomy	M	12.3	13.3	12.7	13.0	13.5	11.7	0.000
	S	4.4	4.8	3.9	4.0	4.1		

Table IV-39. Comparison of Results of Needs Diagnostic Test by sex

Need	Classification	Male	Female	F	P
Abasement	M	12.1	12.5	5.7	0.017
	S	3.9	4.5		
Achievement	M	16.5	15.2	103.4	0.000
	S	4.6	4.9		
Affiliation	M	13.8	14.0	1.3	0.252
	S	4.2	3.9		
Aggression	M	7.8	6.9	40.7	0.000
	S	4.7	4.7		
Dominance	M	10.3	9.3	38.1	0.000
	S	5.2	5.3		
Emotionality	M	12.0	13.4	103.9	0.000
	S	4.6	5.0		
Exhibitionism	M	10.6	10.0	12.0	0.001
	S	5.5	5.5		
Sex	M	11.8	8.7	380.6	0.000
	S	5.8	5.4		
Autonomy	M	13.3	12.6	24.9	0.000
	S	4.2	4.2		

Table IV-40. Comparison of Results of Needs Diagnostic Test by Region

Need \ Region / Classification		Large cities	Middle and small cities	Rural areas	F	P
Abasement	M	12.1	12.3	12.7	11.0	0.000
	S	4.9	4.4	3.8		
Achievement	M	15.9	16.1	15.4	4.6	0.010
	S	4.7	5.0	4.7		
Affiliation	M	13.8	13.9	14.0	0.8	0.467
	S	4.1	4.3	4.1		
Aggression	M	7.0	7.7	7.2	0.7	0.000
	S	4.7	5.1	4.6		
Dominance	M	9.9	10.1	9.2	8.9	0.000
	S	5.3	5.7	5.0		
Emotionality	M	12.3	12.7	13.5	16.9	0.000
	S	4.9	5.1	4.7		
Exhibitionism	M	10.3	10.7	9.8	9.4	0.000
	S	5.4	5.8	5.4		
Sex	M	9.6	10.3	10.6	22.0	0.000
	S	5.9	6.2	5.8		
Autonomy	M	12.8	13.0	13.0	0.6	0.557
	S	4.3	4.5	4.0		

Table IV-41. Results of Factor Analysis of Semantic Differentials for Self

Item \ Factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	0.26561	-0.14758	0.45591	0.05615	0.22966
2	-0.01590	-0.02236	-0.02305	-0.01181	0.22552
3	0.17628	-0.16332	0.27272	0.35784	-0.12751
4	-0.19756	0.58354	0.13325	0.00398	0.05326
5	0.16088	-0.51806	-0.06713	0.17114	0.17359
6	0.02515	-0.02933	-0.16390	0.36800	0.02756
7	-0.40621	0.39407	0.06194	-0.13823	-0.05259
8	0.40139	-0.13433	0.02135	0.21421	0.13976
9	-0.06125	0.06884	0.47709	-0.05282	0.01389
10	0.34002	-0.09267	-0.04317	0.02727	0.25822
11	-0.42823	-0.04090	0.32043	-0.09478	-0.07118
12	0.40089	0.07732	-0.18722	0.16944	0.08218
13	0.48123	-0.07197	-0.05883	0.12398	0.32696
14	-0.30199	0.06527	0.02607	0.05349	0.02863
15	0.31770	0.33518	-0.10287	0.04699	0.12259
16	0.56909	-0.08343	-0.05159	0.11135	0.06077
17	-0.52865	0.14876	0.23306	-0.01227	0.03120
18	-0.63239	0.16790	0.07536	-0.08831	0.06430
19	0.49659	-0.12476	0.05410	0.23519	-0.03292
20	-0.48672	0.05255	0.07989	0.02868	-0.03568
(Eigen Value)	4.2654	1.4921	1.3436	1.0965	1.081
Percent of total variance	21.3	7.5	6.7	5.5	5.4

Table IV-42. Self-image: Factor Loading and Factor Score of Factor 1: Capable-Not Capable

Contents of item	Factor loading			Mid. school			High school		
				Factor score	F	P	Factor score	F	P
Not capable –Capable	-.63	Region	Large cities	.00	3.55	.029	.02	6.12	.002
Clever–foolish	.57		Middle and small cities	.02			.03		
Negative–positive	-.53		Rural areas	-.02			-.01		
Unambitious–ambitious	-.49	Grade	1	.02	8.53	.000	.01	2.63	.105
			2	.01			-.01		
New–Old	.48		3	-.03					
Bad–Good	-.40	Sex	Male	.01	2.04	.153	.03	18.66	.000
			Female	-.01			-.03		
Slow–Fast	-.42	SES	Low	-.03	3.51	.015	.01	1.34	.261
Important–Unimportant	.40		Middle-low	-.01			.01		
Strong–Weak	.40		Middle-high	.02			-.02		
Passive–Active	-.30		High	.02			.02		

Table IV-43. Self-image: Factor Loading and Factor Score of Factor 2: Gentleness

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
Cold–Warm	.58	Region	Large cities	.01	1.56	.210	-.01	1.12	.327
Rounded–Unrounded	-.52		Middle & small cities	-.02			-.01		
Sharp-witted–dull-witted	.34		Rural areas	.01			.02		
		Grade	1	.03	6.25	.002	.01	.62	.432
			2	.02			-.01		
			3	-.05					
		Sex	Male	-.02	2.27	.132	.05	23.52	.000
			Female	.01			-.05		
		SES	Low	.04	5.23	.001	.01	.37	.778
			Middle-low	.00			.02		
			Middle-High	.02			-.01		
			High	.07			-.03		

Table IV-44. Self-image: Factor Loading and Factor Score of Factor 3: Generosity

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
Contemplative–Impulsive	.47	Region	Large cities	- .03	3.03	.048	- .01	.21	.809
Cheerful–Gloomy	- .46		Middle and Small cities	- .02			- .01		
			Rural areas	.05			.02		
		Grade	1	.05	3.48	.031	.04	5.02	.025
			2	- .04			- .04		
			3	- .01					
		Sex	Male	.07	21.85	.000	.03	2.68	.102
			Female	- .07			- .03		
		SES	Low	.11	5.42	.001	.05	1.86	1.134
			Middle-low	- .00			.05		
			Middle-high	- .04			- .03		
			High	- .07			- .08		

Table IV-45. Self-image: Factor Loading and Factor Score of Factor 4: Realistic-Idealistic

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
Realistic-Idealistic	.37	Region	Large cities	.08	22.41	.000	.07	5.59	.004
Composed–Hasty	.37		Middle and Small cities	.05			.02		
			Rural areas	-.15			-.09		
		Grade	1	-.05	3.54	.029	.03	2.19	.139
			2	-.01			-.03		
			3	.05					
		Sex	Male	-.04	6.02	.014	.01	.13	.722
			Female	.03			-.01		
		SES	Low	-.18	17.54	.000	-.03	1.17	.320
			Middle-Low	-.04			-.04		
			Middle -High	.08			.05		
			High	.14			.02		

Table IV-46. Self-image: Factor Loading and Factor Score of Factor 5: Progressive-Conservative

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
New–Old	.33	Region	Large cities	.01	1.75	.174	.06	3.65	.026
Progressive–Conservative	.27		Middle and small cities	- .03			- .02		
Emotional–Rational	.22		Rural areas	.02			- .04		
		Grade	1	.04	3.97	.019	- .04	7.00	.008
			2	- .00			.04		
			3	- .04					
		Sex	Male	- .00	.07	.799	- .01	.86	.354
			Female	.00			.01		
		SES	Low	.07	6.31	.000	- .04	.44	.728
			Middle-Low	.00			.00		
			Middle-High	.01			.02		
			High				.01		

Table IV-47. Results of Factor Analysis of Semantic Differentials for Identity Figure

Factor / Item	Factor 1	Factor 2	Factor 3	Factor 4
1	0.12750	-0.11874	-0.39955	0.31319
2	-0.05575	-0.04998	-0.03567	0.31195
3	0.33602	-0.27229	0.30451	-0.04952
4	-0.12732	0.71439	0.06842	-0.02184
5	0.12821	-0.50250	-0.01218	0.08493
6	0.06080	-0.03800	-0.07435	0.23883
7	-0.39622	0.33366	0.04023	0.05791
8	0.37884	-0.22317	0.07944	0.01648
9	0.00533	0.00596	0.51297	-0.03973
10	0.41541	-0.05497	-0.04774	0.00200
11	-0.43229	-0.04949	0.37823	-0.05457
12	0.51409	0.05806	-0.15009	0.05030
13	0.51292	-0.04604	-0.03753	0.12217
14	-0.22628	0.09164	0.04644	0.34598
15	0.32148	0.33835	-0.07940	-0.05485
16	0.61515	-0.04581	0.10343	0.05082
17	-0.52064	0.14384	0.16539	0.25422
18	-0.60014	0.13847	-0.04701	0.19558
19	0.46964	-0.19975	0.09354	-0.01792
20	-0.42465	0.08447	0.10987	0.16676
Eigen Value	3.9310	1.7096	1.5580	1.1710
Percent of total variance (%)	19.7	8.5	7.8	5.9

Table IV-48. Image of Identity Figure: Factor Loading and Factor Score of Factor 1: Capable-Not Capable

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
Clever–Foolish	.61	Region	Large cities	- .01	6.39	.002	.00	3.07	.047
Not capable–Capable	-.60		Middle and small cities	- .03			- .03		
Negative–Positive	-.52		Rural areas	.04			.03		
Strong–Weak	.51	Grade	1	.00	.34	.715	.01	.27	.602
New–Old	.51		2	- .01			- .01		
			3	.01					
Responsible–irresponsible	.47	Sex	Male	- .01	1.41	.235	- .00	.15	.703
Slow–Fast	.43		Female	.01			.00		
Unambitious–Ambitious	-.42	SES	Low	.05	9.71	.000	- .04	2.24	.082
Progressive–Conservative	.41		Middle-Low	.04			- .00		
			Middle-High	- .05			.04		
Important–Unimportant	.48		High	- .06			- .02		

Table IV-49. Image of Identity Figure: Factor Loading and Factor Score of Factor 2: Gentleness

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
Cold–Warm	.71	Region	Large cities	.02	1.88	.153	.00	2.58	.076
Rounded–Unrounded	-.50		Middle and small cities	-.03			-.03		
Bad–Good	.38		Rural areas	.01			.03		
Sharp-witted–Dull-witted	.34	Grade	1	.03	5.11	.006	.04	14.61	.000
			2	.01			-.04		
			3	.04					
		Sex	Male	-.05	22.26	.000	-.02	3.50	.061
			Female	.04			.02		
		SES	Low	-.01	2.31	.075	.03	.93	.474
			Middle-Low	-.03			-.01		
			Middle-High	-.04			-.02		
			High	-.01			.01		

Table IV-50. Image of Identity Figure: Factor Loading and Factor Score of Factor 3: Deliberate–hasty

Contents of items	Factor loading			Middle school			High school		
				Factor score	F	P	Factor score	F	P
Contemplative–Impulsive	.51	Region	Large cities	.01	.14	.870	-.01	.18	.838
Cheerful–gloomy	-.39		Middle and small cities	.00			.01		
Slow–fast	.38		Rural areas	-.01			.00		
Deliberate–hasty	.30	Grade	1	-.04	3.21	.041	.01	.70	.402
			2	.02			-.01		
			3	.02					
		Sex	Male	-.02	4.69	.031	-.07	22.95	.000
			Female	.02			.07		
		SES	Low	-.00	.62	.600	-.09	1.67	.171
			Middle low	.02			.00		
			Middle high	-.02			. .03		
			High	-.00			.03		

Table IV-51. Image of Identity Figure: Factor Loading and Factor Score of Factor 4: Activity

Contents of items	Factor loading			Middle School			High school		
				Factor score	F	P	Factor score	F	P
Passive–active	.35	Region	Large cities	.09	22.77	.000	.03	28.20	.000
Emotional–rational	.31		Middle and Small cities	.02			.11		
Negative–positive	.25		Rural areas	-.11			-.15		
Relaistic–idealistic	.24	Grade	1	-.02	1.80	.165	-.01	.24	.627
			2	-.03			.01		
			3	-.01					
		Sex	Male	.01	.89	.345	.01	.64	.425
			Female	.01			-.01		
			Low	-.15			.00		
		SES	Middle-Low	-.06	24.15	.000	-.04	3.28	.020
			Middle-high	.10			-.02		
			High	.12			.10		

Table IV-52. Contents of Identifity Figures by Rank

Grade / Contents / Rank	Total middle school students N = 3,373		Total high school students N = 2,047		1st yr of mid. school N = 1,123		2nd yr of mid. school N = 1,154		3rd yr of mid. school N = 1,096		1st yr of high school N = 1,038		2nd yr of high school N = 1,009	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Famous person	26.7 (902)	Teacher	29.4 (602)	Famous person	27.1 (304)	Famous person	31.0 (358)	Teacher	30.6 (336)	Teacher	29.9 (310)	Teacher	28.9 (292)
2nd	Teacher	26.3 (889)	Famous person	27.4 (562)	Teacher	26.6 (299)	Teacher	22.0 (254)	Friend	24.7 (271)	Famous person	27.7 (287)	Famous person	27.2 (275)
3rd	Friend	19.4 (665)	Friend	18.9 (388)	Friend	16.2 (182)	Friend	17.5 (202)	Famous person	21.9 (240)	Friend	18.1 (188)	Friend	19.8 (200)
4th	Mother	10.9 (368)	Father	7.1 (156)	Mother	11.5 (129)	Mother	12.3 (145)	Mother	8.6 (94)	Father	7.13 (74)	Father	8.1 (82)
5th	Father	6.3 (213)	Mother	5.5 (112)	Father	6.9 (78)	Father	7.0 (81)	Father	4.9 (54)	Mother	5.78 (60)	Mother	5.2 (52)

Table IV-53. Famous Person Selected as an Identity Figure.

Grade / Contents / Rank	Total middle school students N = 902		Total high school students N = 562		1st yr. of middle school N = 304		2nd yr. of middle school N = 358		3rd yr. of middle school N = 240		1st yr. of high school N = 287		2nd yr. of high school N = 275	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Lee, Soon-shin	14.5 (131)	Lee, Soon-shin	7.2 (41)	Lee, Soon-shin	18.8 (57)	Lee, Soon-shin	10.6 (38)	Lee, Soon-shin	15 (36)	Lee Soon-shin	7.7 (22)	Lee, Soon-shin	6.9 (19)
2nd	Edison	7.4 (67)	Einstein	5.0 (28)	Edison	8.2 (25)	Edison	8.7 (31)	Napoleon	5.8 (14)	Edison	6.3 (18)	Helen Keller	4.4 (12)
3rd	Shin Saimdang	4.0 (36)	Schweitzer	3.9 (22)	King Sejong	4.9 (15)	Shin Saimdang	3.4 (12)	Edison	4.6 (11)	Schweitzer	4.9 (14)	Park, Jeong-hee	4 (11)
4th	Schweitzer	3.2 (29)	Helen Keller	3.6 (20)	Shin Saimdang	4.3 (13)	Schweitzer	2.8 (10)	Shin Saimdang	4 (11)	Napoleon	4.9 (14)	Einstein	3.6 (10)
5th	Neightingale	3.1 (28)	Park, Jeong-hee	3.2 (18)	Neightingale	4.3 (13)	Park, Jeong-hee	2.5 (9)	Jesus	3.8 (9)	Lincoln	4.5 (13)	Shin Saimdang	3.3 (9)

Table IV-54. Famous Person Selected as an Identity Figure by Category

Grade / Contents / Rank	Total middle school students N = 902		Total high school students N = 562		1st yr. of school N = 304		2nd yr. of middle school N = 358		3rd yr. of middle school N = 240		1st yr. of high school N = 287		2nd yr. of high school N = 275	
	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency	Contents	% frequency
1st	Soldier	23.9 (216)	Politician	23.3 (131)	Soldier	28.6 (87)	Soldier	21.0 (75)	Politician	23.3 (56)	Politician	24.4 (70)	Politician	22.2 (61)
2nd	Politician	15.9 (143))	Soldier	12.1 (68)	Inventor and scientist	16.8 (51)	Politician	15.1 (54)	Soldier	21.5 (54)	Soldier	11.8 (34)	Soldier	12.4 (34)
3rd	Inventor and scientist	13.3 (120)	Inventor and scientist	9.6 (54)	Politician	10.9 (33)	Inventor and scientist	13.4 (48)	Inventor and scientist	8.8 (21)	Social benefactor	10.5 (30)	Hero of novel	11.3 (31)
4th	Social benefactor	7.8 (70)	Hero of novel	8.5 (48)	Man for national independence	4.6 (14)	Hero of novel	7.3 (26)	Social benefactor	7.9 (19)	Inventor and scientist	10.1 (29)	Literary man	9.5 (26)
5th	Educator	4.8 (43)	Social benefactor	8.5 (48)	Educator	4.6 (14)	Social benefactor	6.4 (23)	Educator	6.3 (15)	Literary man Hero of novel	5.9 (17)	Inventor and scientist	9.1 (25)

Table IV-55. Comparison of Student's Value of Human Nature by Grade, Sex, and Region

Classification \ Range / Frequency (%)		Total		Original Sin		Middle Path		Innate Goodness		x^2
		Frequency	%	Frequency	%	Frequency	%	Frequency	%	
Total Middle School Students (N = 3,289)		13,372	100	2,312	17.3	4,977	37.2	6,083	46.5	*** 49.10
Total High School Students (N = 1,861)		8,432	100	909	10.9	3,900	46.8	3,533	42.4	
Middle School	1st yr. of Middle School (1,410)	4,434	100	742	16.7	1,497	34.8	2,195	49.5	*** 664.55
	2nd yr of Middle School (1,086)	4,271	100	743	17.4	1,656	38.8	1,872	43.8	
	3rd yr. of Middle School (1,093)	4,362	100	527	12.1	1,819	41.7	2,016	46.2	
High School	1st year of High School (1,034)	4,138	100	471	11.4	1,846	44.6	1,821	44.0	
	2nd year of High School (1,029)	4,114	100	438	10.6	1,964	47.7	1,712	41.6	
Middle School	Male (1,433)	6,026	100	1,275	21.2	2,111	35.0	2,640	43.8	*** 105.49
	Female (1,856)	7,346	100	1,037	14.1	2,866	39.0	3,443	46.9	
High School	Male (938)	4,128	100	496	11.8	1,919	45.5	1,713	40.6	* 5.13
	Female (923)	4,214	100	413	9.8	1,981	47.0	1,820	43.2	
Middle School	Large Cities (1,153)	4,914	100	990	20.1	1,888	38.4	2,036	41.4	* 58.5
	Middle and Small Cities (1,104)	4,310	100	686	15.9	1,733	40.2	1,891	43.9	
	Rural Areas (1,032)	4,148	100	636	15.3	1,356	32.7	2,156	52.0	
High School	Large Cities (485)	2,747	100	265	9.6	1,359	49.5	1,123	40.9	*** 57.92
	Middle and Small Cities (682)	2,822	100	259	9.2	1,384	49.0	1,179	41.8	
	Rural Areas (694)	2,773	100	385	13.9	1,157	49.7	1,231	44.4	

* $P < .05$, *** $P < .001$

Table IV-56. Comparison of Student's Value of Nature by Grade, Sex and Region

Classification \ Range / Frequency (%)		Total		Subjugation		Harmony		Mastery		x^2
		Frequency	%	Frequency	%	Frequency	%	Frequency	%	
Total Middle School Students		13,148	100	1,279	9.7	1,120	8.5	10,749	81.8	***
Total High School Students		8,253	100	853	10.3	995	12.1	6,405	77.6	1,830.90
Middle School	1st yr. of middle School	4,437	100	745	10.7	406	9.2	3,556	80.1	*** 321.01
	2nd yr. of Middle School	4,345	100	456	10.5	366	8.4	3,523	81.1	
	3rd yr. of Middle School	4,367	100	349	8.0	348	8.0	3,670	84.0	
High School	1st yr. of High School	4,140	100	421	10.2	428	10.7	3,291	79.5	
	2nd yr. of High School	4,116	100	435	10.6	567	13.8	3,114	75.7	
Middle School	Male	5,726	100	470	8.9	5 521	9.9	4,735	89.8	*** 150.58
	Female	7,422	100	809	10.9	599	8.1	6,014	81.0	
High School	Male	4,038	100	375	9.3	476	11.8	3,187	78.9	*** 79.41
	Female	4,215	100	478	11.3	519	12.3	3,218	76.4	
Middle School	Large Cities	4,610	100	411	8.9	419	9.1	3,870	82.0	*** 287.18
	Middle and Small Cities	4,413	100	384	8.7	385	8.7	3,644	82.6	
	Rural Areas	4,125	100	4,184	11.7	316	7.7	3,325	80.6	
High School	Large Cities	2,748	100	310	11.3	348	12.7	2,090	76.1	*** 80.12
	Middle and Small Cities	2,729	100	274	10.0	370	13.6	2,805	76.4	
	Rural Areas	2,776	100	269	9.7	277	10.0	2,230	80.3	

*** $P < .001$

Table IV-57. Comparison of Student's Value of Time by Grade, Sex, and Region

Classifiction \ Range / Frequency (%)		Total		Past		Present		Fature		x^2
		Fre-quency	%	Fre-quency	%	Fre-quency	%	Fre-quency	%	
Total Middle School Students		13,136	100	2,459	18.7	3,582	27.2	7,095	54.0	*** 632.48
Total High School Students		8,240	100	1,079	13.1	1,771	21.5	5,399	65.2	
Middle School	1st yr. of Middle School	4,428	100	896	20.2	1,330	30.0	2,202	49.7	*** 477.07
	2nd Yr. of Middle School	4,342	100	814	18.7	1,172	27.0	2,356	54.3	
	3rd yr. of Middle School	4,366	100	749	17.2	1,080	24.7	2537	58.1	
High School	1st yr. of High School	4,134	100	565	13.7	906	21.9	2,663	64.4	
	2nd yr. of High School	4,115	100	514	12.5	865	21.0	2,736	66.5	
Middle School	Male	5,674	100	949	16.7	1,518	26.8	3,207	56.5	*** 65.68
	Female	4,717	100	1,465	19.8	2,064	27.8	3,888	52.4	
High School	Male	4,037	100	479	11.9	839	20.8	2,719	67.3	*** 114.6
	Female	4,212	100	600	14.2	932	22.1	2,680	63.6	
Middle School	Large Cities	4,609	100	827	17.9	1,331	28.9	2,451	53.2	*** 261.4
	Middle nd Small Cities	4,405	100	769	17.5	1,131	25.7	2,505	56.9	
	Rural Areas	4,1222	100	863	20.9	1,120	27.2	2,139	52.0	
High School	Large Cities	2,748	100	315	11.5	559	20.3	1,874	68.2	*** 102.31
	Middle and Small Cities	2,728	100	332	12.2	675	24.7	1,721	63.1	
	Rural Areas	2,773	100	432	15.6	537	19.4	1,804	65.1	

*** P < 001

Table IV-58. Comparison of Student's Value of Activity by Grade, Sex, and Region

Classification \ Range / Frequency (%)		Total		Being		Becoming		Doing		
		Frequency	%	Frequency	%	Frequency	%	Frequency	%	x^2
Total Middle School Students		13,144	100	4,004	30.5	7,214	54.9	1,926	24.7	***
Total High School Students		8,256	100	2,681	32.5	4,363	52.8	1,212	14.7	39.77
Middle School	1st yr. of Middle School	4,431	100	1,285	29.0	2,503	56.5	643	14.5	
	2nd yr. of Middle School	4,346	100	1,391	32.0	2,503	53.8	619	14.2	***
	34d yr. of Middle School	4,367	100	1,328	30.4	2,375	54.4	664	15.2	872.60
High School	1st yr. of High School	4,138	100	1,328	32.1	2,223	53.7	587	14.2	
	2nd yr. of High School	4,118	100	1,358	32.9	2,140	52.0	625	15.2	
Middle School	Male	5,723	100	1,785	31.2	2,927	51.1	1,011	17.7	***
	Female	7,421	100	1,365	33.8	2,051	50.7	915	12.5	24.02
High School	Male	4,042	100	1,365	33.8	2,051	50.7	626	15.5	*
	Female	4,214	100	1,316	31.2	2,312	54.9	586	13.9	2.75
Middle School	Large City	4,608	100	1,539	33.4	2,368	51.4	701	15.2	
	Middle and Samll City	4,413	100	1,369	31.0	2,377	53.9	667	15.1	***
	Rural Areas	4,123	100	1,096	26.6	2,469	59.9	558	13.5	91.17
High School	Large City	2,748	100	871	31.7	1,415	51.5	462	16.8	
	Middle and Small City	2,732	100	970	35.5	1,383	50.6	379	13.9	***
	Rural Areas	2,776	100	840	30.3	1,565	56.5	371	13.4	15.6

*** $P < .001$

Table IV-59. Comparison of Student's Value of Human Relationships by Grade, Sex, and Region.

Classification \ Range / Frequency (%)		Total		Linearity		Collaterality		Individualism		x^2
		Fre- quency	%	Fre- quency	%	Fre- quency	%	Fre- quency	%	
Total Middle School Students		13,155	100	1,452	11.0	7,415	56.4	4,288	32.6	***
Total High School Students		8,249	100	976	11.8	4,197	50.9	3,076	37.3	101.26
Middle School	1st yr. of Middle School	4,438	100	519	11.7	2,513	56.6	1,406	31.7	
	2nd yr. of Middle School	4,342	100	452	10.4	2,435	56.1	1,455	33.5	
	3rd yr. of Middle School	4,375	100	481	11.0	2,467	56.4	1,427	32.6	***
High School	1st yr. of High School	4,137	100	477	11.5	2,123	51.3	1,537	37.1	723.74
	2nd yr. of High School	4,114	100	499	12.1	2,076	50.5	1,539	37.4	
Middle School	Male	5,728	100	690	12.1	3,171	55.4	1,861	32.6	***
	Female	7,427	100	762	10.3	4,244	57.1	2,421	32.6	23.4
High School	Male	4,037	100	536	13.3	2,005	49.7	1,496	37.1	***
	Female	4,212	100	440	10.4	2,192	52.0	1,580	37.5	86.14
Middle School	Large Cities	4,612	100	475	10.3	2,598	56.3	1,539	33.4	***
	Middle and Small Cities	4,418	100	483	10.9	2,553	57.8	1,382	31.3	262.54
	Rural Areas	4,125	100	494	12.0	2,264	54.9	1,367	33.1	
High School	Large Cities	2,746	100	369	13.4	1,280	46.6	1,097	39.9	***
	Middle and Small Cities	2,731	100	300	11.0	1,411	51.7	1,020	37.3	146.73
	Rural Areas	2,772	100	307	11.1	1,506	54.3	959	34.6	

*** $P < .001$

Table IV-60. Comparison of View of Economy by Grade, Sex, and Region

Classification \ Range / Frequency (%)		Total		Aim		Neural		Mean		x^2
		Frequency	%	Frequency	%	Frequency	%	Frequency	%	
Total Middle School Students		9,865	100	768	7.8	417	4.2	8,680	88.0	***
Total High School Students		5,792	100	574	9.9	233	4.0	4,985	86.1	195.91
Middle School	1st yr. of Middle School	3,329	100	212	6.4	136	4.1	2,981	89.5	
	2nd yr. of Middle School	3,325	100	3 318	9.6	141	4.2	2,996	86.2	***
	3rd yr. of Middle School	3,277	100	304	9.3	140	4.3	2m833	86.5	1,147.19
High School	1st yr. of High School	3,103	100	257	8.3	107	3.4	2,739	88.3	
	2nd yr. of High School	3,089	100	317	10.3	126	4.1	2,646	85.7	
Middle School	Male	4,296	100	375	8.7	203	4.7	3,748	86.6	
	Female	5,569	100	393	7.1	214	3.8	4,962	89.1	***
High School	Male	2,032	100	319	12.1	119	4.5	2,194	83.4	246.11
	Female	3,160	100	255	8.1	114	3.6	2,791	88.3	
Middle School	Large Cities	3,461	100	252	7.3	145	4.2	3,064	88.5	
	Middle and Small Cities	3,310	100	241	7.3	132	4.0	2,937	88.7	***
	Rural Areas	3.094	100	275	8.9	140	4.5	2,679	86.6	372.57
High School	Large Cities	2,061	100	222	10.8	95	4.6	1,744	84.6	
	Middle and Small Cities	1,649	100	185	11.2	23	4.4	1,391	84.4	***
	Rural Areas	2,082	100	167	8.0	65	3.1	1,850	88.9	138.06

*** $P < .001$

Table IV-61. Comparison of View of Money by Grade, Sex, and Region

Classification \ Range (Frequency (%))		Total		Saving		Buying		Spending for Entertainment		
		Frequency	%	Frequency	%	Frequency	%	Frequency	%	χ^2
Total Middle School Students		3,289	100	1,182	35.9	2,037	61.9	70	2.1	***
Total High School Students		1,861	100	515	27.7	1,286	69.1	60	3.2	551.78
Middle School	1st yr. of Middle School	1,110	100	390	35.1	702	63.2	18	1.6	
	2nd yr. of Middle School	1,086	100	415	38.2	468	60.0	23	2.1	***
	3rd yr. of Middle School	1,093	100	377	34.5	687	62.9	29	2.7	75.5
High School	1st yr. of High School	934	100	261	27.9	648	69.4	25	2.7	
	2nd yr. of High School	927	100	254	27.4	638	68.8	35	3.8	
Middle School	Male	1,433	100	486	33.9	902	62.9	45	3.1	***
	Female	1,856	100	696	37.5	1,135	61.2	25	1.4	137.69
High School	Male	938	100	242	25.8	648	69.1	48	5.1	***
	Female	923	100	273	29.6	638	69.1	12	1.3	13.48
Middle School	Large Cities	1,153	100	400	34.7	727	63.1	26	2.3	***
	Middle and Small Cities	1,104	100	397	36.0	679	61.5	28	2.5	156.61
	Rural Areas	1,032	100	385	37.3	631	61.1	16	1.6	
High School	Large Cities	485	100	162	33.4	296	61.1	27	5.6	***
	Middle and Small Cities	682	100	146	21.4	520	76.2	16	2.3	57.46
	Rural Areas	694	100	207	29.8	470	67.7	17	2.4	

*** $p < .001$

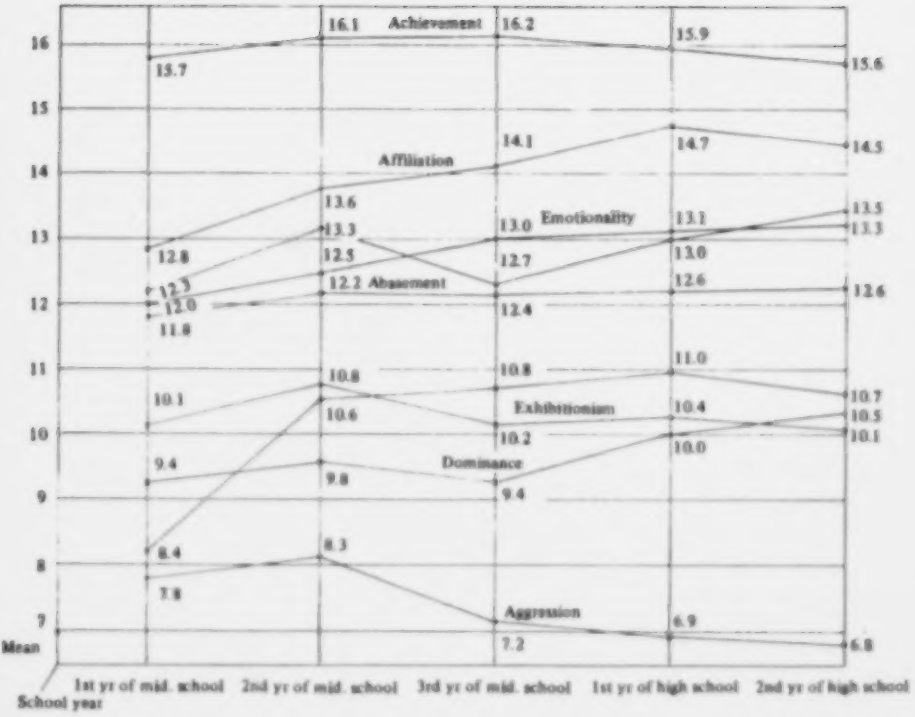

Figure IV-1. Comparison of Scores of Needs by Grade According to Needs Diagnostic Test

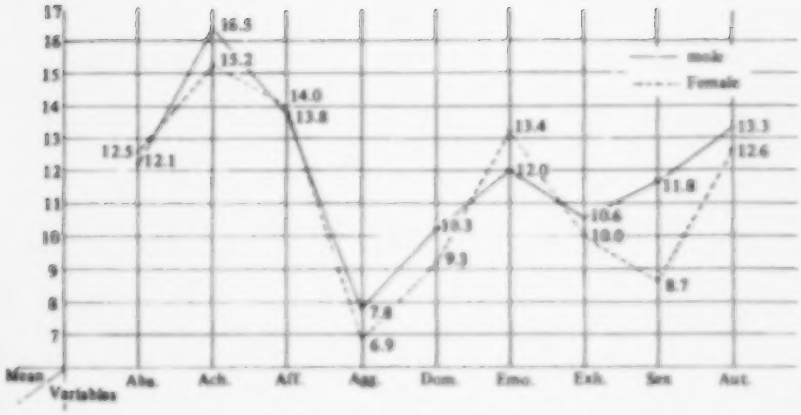

Figure IV-2. Comparison of Socres of Needs Diagonstic Test by Sex

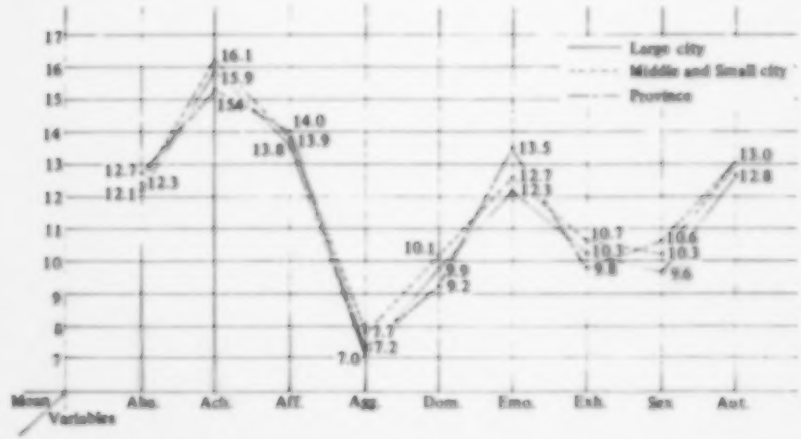

Figure IV-3. Comprison of Scores of Needs as to Needs Diagnostic Test by Region

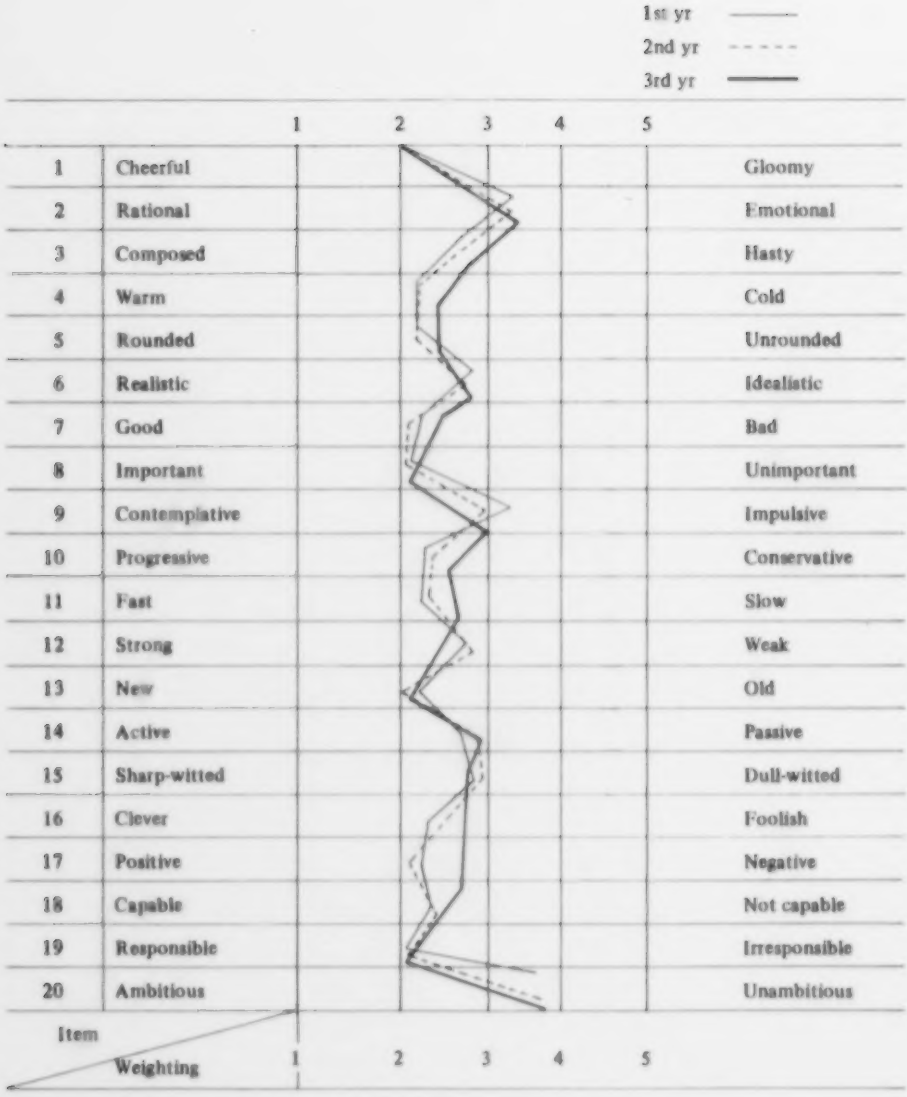

Figure IV-4. Comparison of Mean scores of Semantic Differentials for Self of Middle School Students by Grade

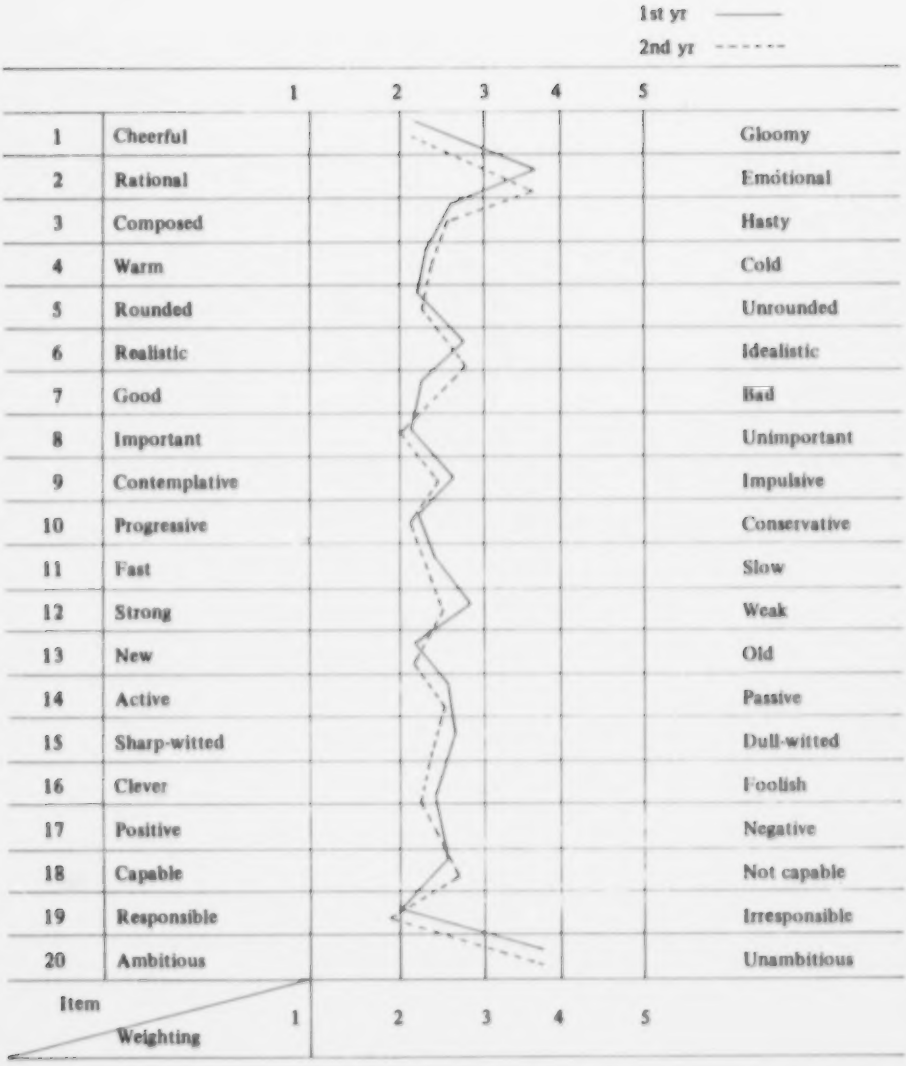

Figure IV-5. Comparison of Mean Scores of Semantic Differentials for Self of High School Students by School Grade

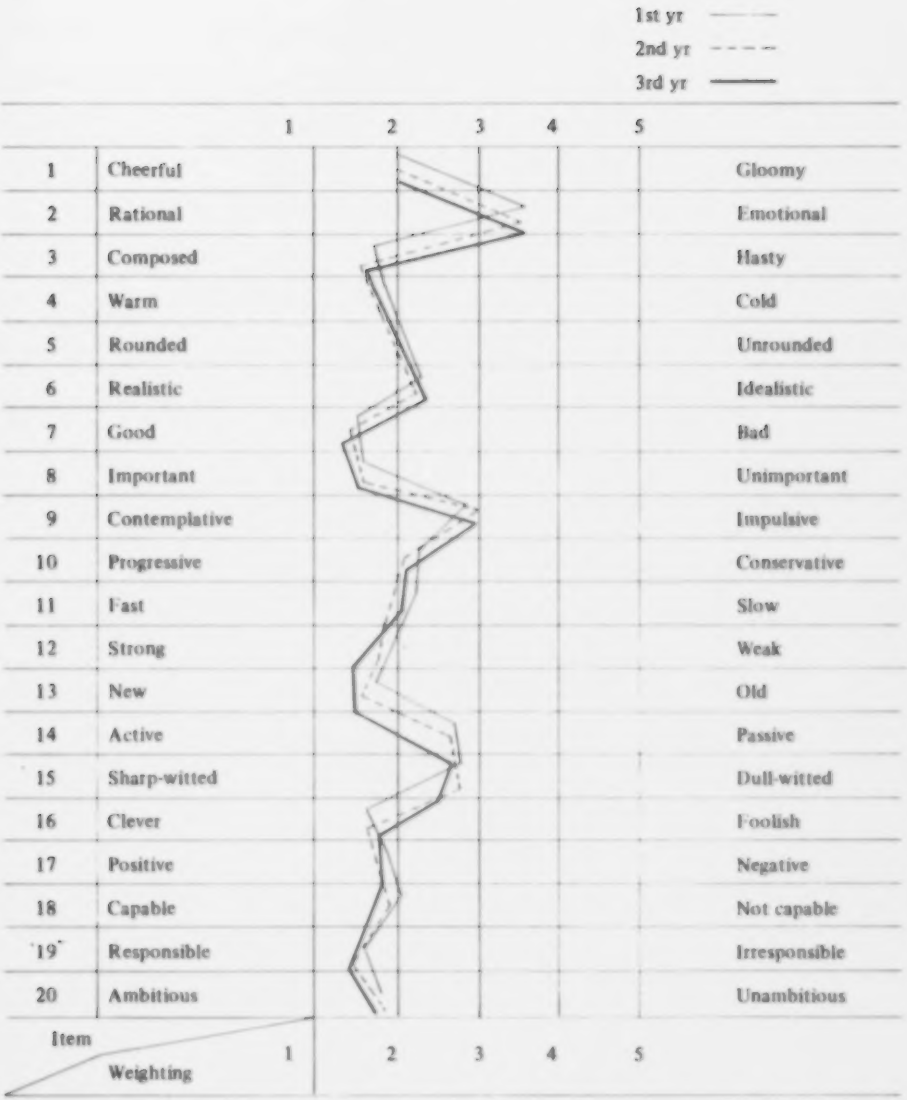

Figure IV-6. Comparison of Mean Scores of Semantic Differentials for Identity Figure of Middle School Students by Grade

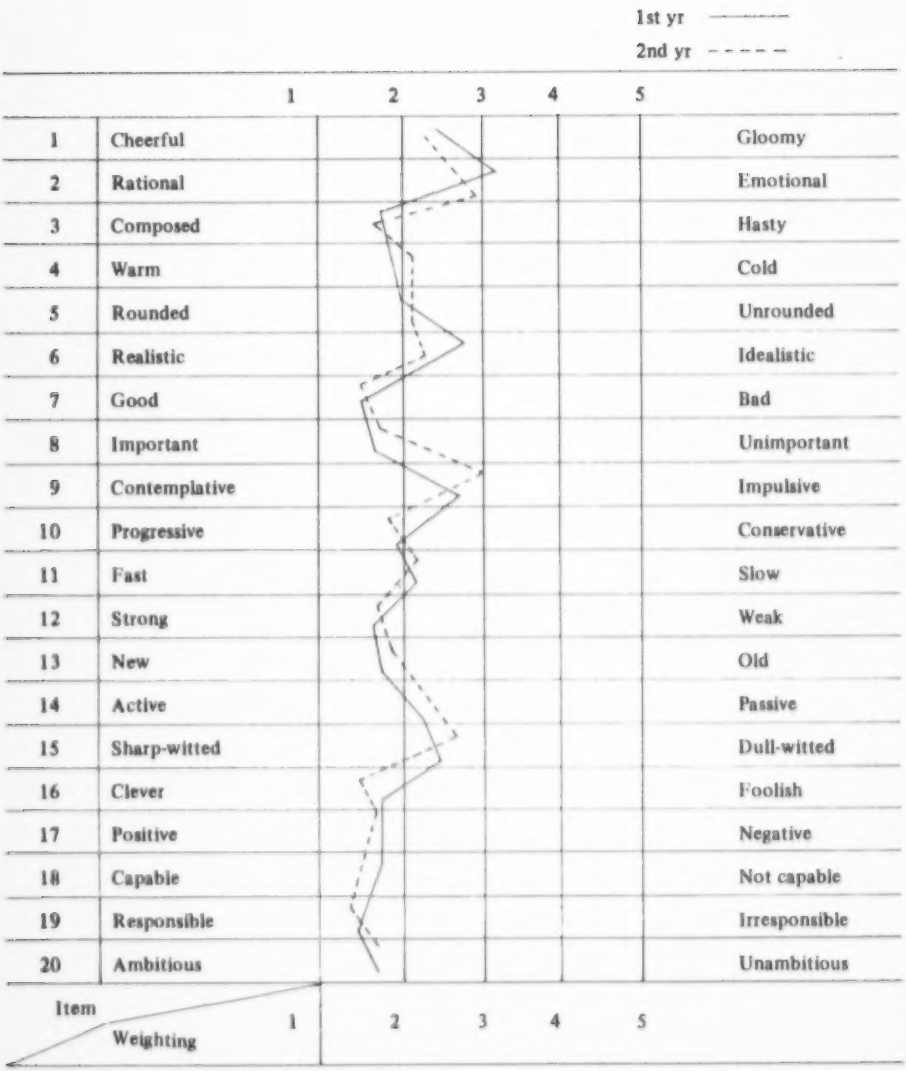

Figure IV-7. Comparison of Mean Scores of Semantic Differentials for Identity Figure of High School Students by Grade

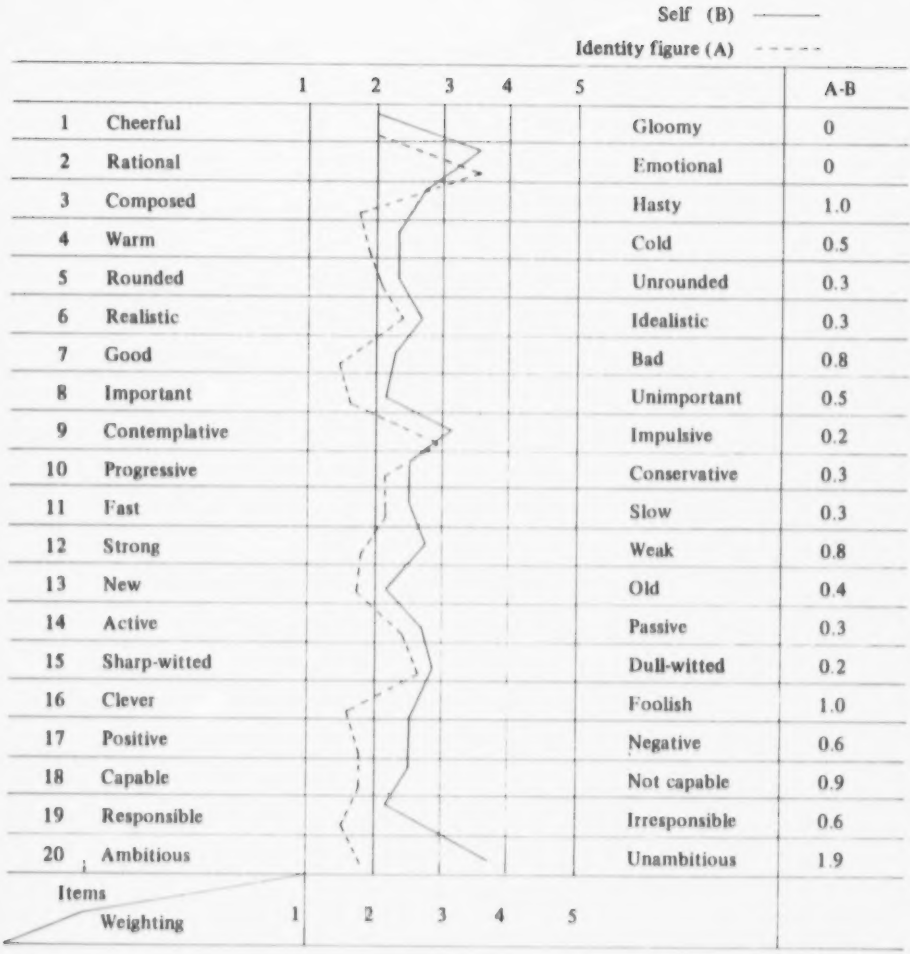

Figure IV-8. Comparison Between Mean Scores of Self-image and Those of Identity Figure of Middle School Students

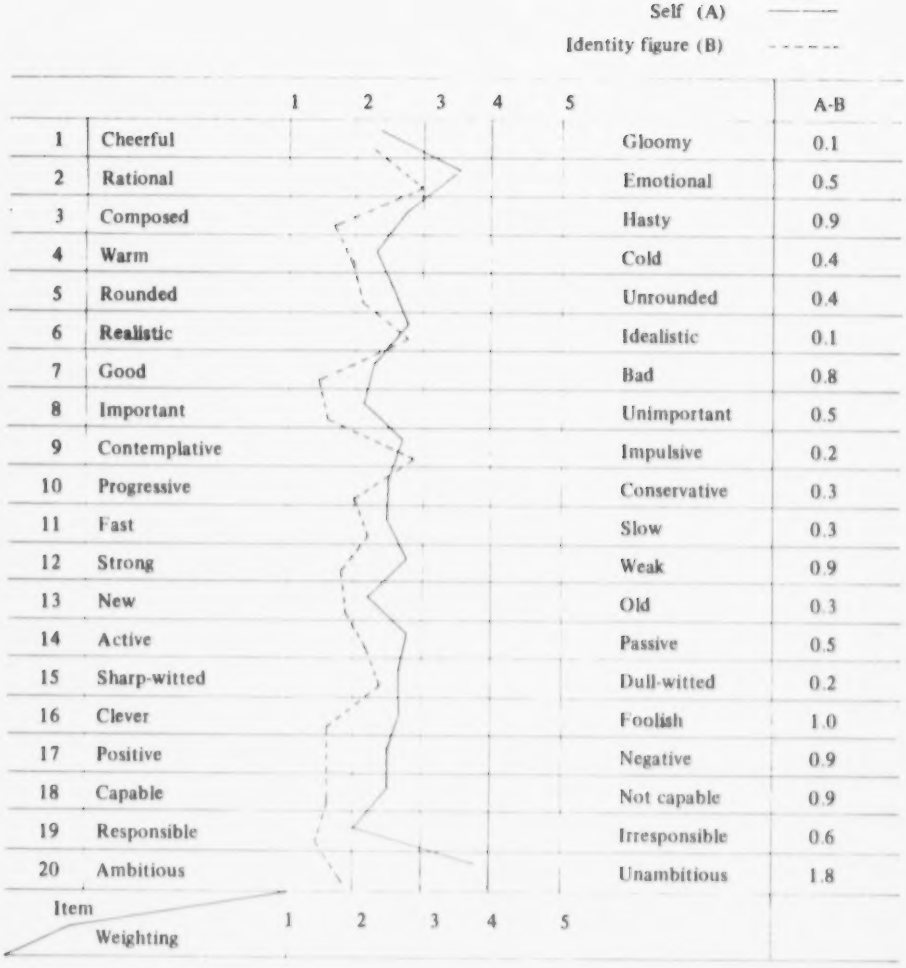

Figure IV-9. Comparison Between Average Score of Self-image and Those of Identity Figure of High School Stuents

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